RA-N

iBVD

Dokument Id
5560523903-00001
Version
2

Skapad
2018-10-18
Status
2018-10-19

Uppgiftslämnaren reserverar sig för eventuella fel i produktinformationen eller felaktigt registrerade uppgifter och förbehåller sig rätten att korrigera och/eller komplettera produktinformation utan föregående avisering

1 GRUNDDATA

Varubeskrivning

Radiatorventiler RA-N och RA-U

Övriga upplysningar

Klassificeringar

ETIM ›	-EC010136 -
BK04 ›	
BSAB ›	
UNSPSC ›	

Leverantörsuppgifter

Företagsnamn
Danfoss AB

Organisationsnummer
5560523903

Adress
Industrigatan 5

Hemsida
se.varme.danfoss.com

Miljökontaktperson

Namn
Anders Gustavsson

Telefon
013-25 85 86

E-post
anders.gustavsson@danfoss.com

2 HÅLLBARHETSARBETE

Företagets certifiering

Policys och riktlinjer

3 INNEHÅLLSDEKLARATION

Kemisk produkt	Nej
Omfattas varan av RoHs-direktivet	Nej
Innehåller produkten tillsatt nanomaterial, som är medvetet tillsatta för att uppnå en viss funktion	Nej
Varans vikt	0,16 - 0,596 kg

Vara / Delkomponenter

Koncentrationen har beräknats på hela varan

Ingående material /komponenter	Vikt-% i komponent	CAS-nr (alt legering)	EG-nr (alt legering)	Vikt % i produkt	Kommentar
Zink	<1%	7440-66-6	231-175-3	<1%	
Mässing CW452K (CuSn6), Pb 0,02%	<1%	Övrigt, metaller		<1%	
Rostfritt stål EN 1.4310, 6-9,5 % Ni, Bedömning på legeringsnivå	1% - 2%	12597-68-1	603-108-1	1 - 2%	
nitrile-butadiene rubber, Perbunan, NBR-gummi, Acrylonitrile-butadiene copolymer , 2-Propenenitrile, polymer with 1,3-butadiene	<1%	9003-18-3		<1%	
Polypropen (PP)	2% - 5%	9003-07-0		2 - 5%	
Poly(thiophenylene), PPS, Poly(phenylene sulfide), polyphenylene sulfure	2% - 5%	9016-75-5		2 - 5%	
Mässing CW617N (CuZn40Pb2) Pb 2,5%	92% - 97%	Övrigt, metaller		92 - 97%	4MS, innehåller >0,1% bly

Del av materialinnehållet som är deklarerat 99% - 100%

Särskilt farliga ämnen

Följande ämnen finns med på kandidatförteckningen i en koncentration och som överstiger 0,1 vikts-%:

-Mässing CW617N (CuZn40Pb2) Pb 2,5%
-Bly

Utgåva av kandidatförteckningen som har använts
2018-06-27 00:00:00

Övrigt

Hänsyn har inte tagits till iBVDs redovisningskrav vid redovisning av ingående ämnen.

4 RÅVAROR

Återvunnet material

Innehåller varan återvunnet material: Nej

Träråvara

Träråvara ingår i varan: Nej

5 MILJÖPÅVERKAN

Finns en miljövarudeklaration framtagen enligt EN15804 eller ISO14025 för varan

Ej angivet

Finns annan miljövarudeklaration

Ja

6 DISTRIBUTION

Information saknas

7 BYGGSKEDET

Ställer varan särskilda krav vid lagring?	Ja
Lagras inomhus	
Ställer varan särskilda krav på omgivande byggvaror?	Nej

8 BRUKSSKEDET

Finns skötselanvisningar/skötselråd?	Nej
Finns en energimärkning enligt energimärkningsdirektivet (2010/30/EU) för varan?	Ej relevant

9 RIVNING

Kräver varan särskilda åtgärder för skydd av hälsa och miljö vid rivning/demontering?	Nej

10 AVFALLSHANTERING

Omfattas den levererade varan av förordningen (2014:1075) om producentansvar för elektriska och elektroniska produkter när den blir avfall?	Nej
Är återanvändning möjlig för hela eller delar av varan?	Nej
Är materialåtervinning möjlig för hela eller delar av varan?	Ja
Alla metalldelar kan smältas ned och återanvändas som nytt råmaterial Alla plastdelar kan malas ned och återanvändas som nytt råmaterial	
Är energiåtervinning möjlig för hela eller delar av varan?	Nej
Har leverantören restriktioner och rekommendationer för återanvändning, material- eller energiåtervinning eller deponering?	Ja
Alla metalldelar kan smältas ned och återanvändas som nytt råmaterial Alla plastdelar kan malas ned och återanvändas som nytt råmaterial	
När den levererade varan blir avfall, klassas den då som farligt avfall?	Nej
Avfallskod (EWC) för den levererade varan	Ej angivet

11 ARTIKELIDENTITETER

RSK-nummer	Eget Artikel-nr	GTIN
481 82 07	013G4022	5702420043074
481 82 09	013G0072	5702420013343
481 82 17	013G0074	5702420007960
481 82 25	013G0076	5702420008950
481 82 33	013G0071	5702420000411
481 82 41	013G0073	5702420008165
481 82 58	013G0075	5702420009551
481 82 66	013G3011	5702420001685
481 82 74	013G3013	5702420009483
481 82 82	013G3015	5702420005706
481 83 81	013G0038	5702420003054
481 83 99	013G0037	5702420001678
	013G402200	

12 Bilagor

Produktdatablad	RA_N_RA_U_keym_VDTDH307.pdf
Prestandadeklaration	RA-N valves BVB-assessment 2016-09-30.pdf
Säkerhetsblad	
Miljövarudeklaration	RA-N valves BVB-assessment 2016-09-30.pdf
Skötselanvisning	

Övriga bifogade dokument

-RA_N_RA_U_keym_VDTDH307.pdf

Byggvarubedömningen's guideline and information requirements for assessment of product, Version 2016-1.

These guidelines describe what information that Byggvarubedömningen requires for assessment of articles and chemical products. Information about the article or chemical product can be provided in this document, alternatively refer to another documentation in which the corresponding information is given.

1. Product information

Product

Product name:	Radiator valves	
Article No.: *Specify the type of number, for example RSK, E number, EAN, GTIN or supplier's article number. This should also be stated on the application.*	013G0054; 013G0071; 013G0072; 013G0073; 013G0074; 013G0075; 013G0076; 013G0037; 013G0038; 013G3011; 013G3013; 013G3015; 013G3022; 013G4022	
Product description: *On application, please attach a product data sheet or similar documentation.*	Radiator valves for water based heating systems. To be mounted on radiators, convectors, e.g.	
Type of product:	☐ Chemical product	☒ Article
Date (year, month, day) of preparation/revision:	2016-09-30	

Supplier/Manufacturer

Supplier:	Danfoss
Manufacturer if other than the supplier: *Voluntary information*	
Supplier contact:	Anders Gustavsson
Address:	Danfoss AB SE 58199 Linköping
E-mail:	anders.gustavsson@danfoss.com
Phone number:	+46 1325 8586

Supporting documentation

Has a declaration of performance, in line with the Swedish Construction Products Regulation, been prepared for the product?	☐ Yes	☒ No
If yes, attach the declaration of performance with the application		
Is the article/product an electronic product and covered by the RoHS-directive (2011/65/EU)?	☐ Yes	☒ No
If yes, attach an "EU Declaration of Conformity", or alternatively another certificate that attests that the product corresponds to the requirements according to the RoHS-directive (2011/65/EU), together with the application		
If the article/product is an electronic product that is covered by an exemption according to RoHS-directive (2011/65/EU), specify which exemption and date (year, month, day) when the exemption expires if time-limited:	Exemptions according to RoHS: Date:	

2. Declaration of contents:

Does the product or any of its subcomponents, if it is a composite product, contain substances with particularly hazardous properties (Substances of Very High Concern, SVHC-substances), which are included in the Candidate List at a concentration above 0.1 weight%?	☐ Yes	☒ No
If yes, specify which substances in Table 1.		
State the date (year, month, day) for control the Candidate List.	Date: 2016-09-30	
The concentration is calculated at component level established on the principle "once a product, always a product" principle. The Candidate List is available at: *http://echa.europa.eu/sv/candidate-list-table.*		

Specify the total content of the article or the chemical product, ***on delivery,*** in Table 1, or alternatively attach other documentation that provides the corresponding information. For instructions, please refer to the "Declaration of contents, BVB's declaration requirements, 2016-1", which is found at the end of this document.

Table 1, Contents of included substances and material (declaration of content in accordance with requirements)

Included substances and material	**EG No./CAS No.** *(alternatively alloy)*	**Weight%** *(of entire product)*	*When applicable,* **state for which subcomponent**	**Weight%** *(of substance in subcomponent)*	**Comments** *(state eventual application of non-harmonized classifications)*
Brass	**CW614N/CW617N**	**92-97%**			
Plastic	**PP, 30%GF**	**2-5%**			
Plastic	**PPS, 40%GF**	**2-5%**			
Rubber	**NBR/EPDM**	**<1%**			
Stainless steel	**1.4310**	**1-2%**			
Tinbronze	**CW452K**	**<1%**			
Zink	**Z410**	**<1%**			
Grease	**Syntheso Proba 330**	**<1%**			
Grease	**Unisilkon L641**	**<1%**			

Are all substances reported in percentages down to 0.01% in Table 1? *(enable assessment with regard to the Recommended level)*	☐ Yes	☒ No
If not, does the report fulfill the instructions for the Accepted level, which is described in "Declaration of contents, BVB's declaration requirements, 2016-1" , which is found at the end of this document	☒ Yes	☐ No
If any deviations from BVB's reporting requirements exist, specify these in the comments in Table 1, or alternatively here.	Other comments:	

If the chemical composition differs after application, then the content of the applied product is given in Table 2. This applies to chemical products. If the content is unchanged, no information needs to be provided in the table.

Table 2, Contents for applied products (full content in accordance with declaration requirements)

Included substances and material	**EG No./CAS No.**	**Weight%** *(of the applied product)*	**Comments** *(state any application of non-harmonized classifications)*

If any deviations from BVB's reporting requirements exist, specify these in the comments in Table 2, or alternatively here.	Other comments:

Nanomaterial

Does the product contain any nanomaterial that has been purposefully added to achieve a specific function? *Information regarding whether nanomaterial has been added to achieve a specific function must be stated, but has no impact on the assessment.*	☐ Yes	☒ No
If yes, specify the material.	Material:	

3. Recycled raw material

Does the product contain recycled material?	☐ Yes	☒ No
If yes, fill in Table 3.		

If the product consists of recycled materials specify the material and the percentages of the total weight of the product, in *Table 3, Recycled materials.*

Table 3, Recycled material

Material	**Percentage (%)** *of the total product's weight*	**Percentage (%)** *of the recycled material that has not reached the consumer level, such as production waste, etc. (pre-consumer)*	**Percentage (%)** *of the recycled material that has reached the consumer level (post-consumer)*	**Comments**

If wood raw material is included

Can the product be ordered with sustainability certificates for the wood raw material? *E.g.: FSC and PEFC*	☐ Yes	☐ No
Explain if the certificate does not cover all of the wood raw material:		
If yes, attach a certificate/assurance that the product can be ordered with a sustainability certificate together with the application.		
If no, state the country where the wood raw material was harvested.	Country of harvest:	
Is the wood species or origin in the CITES appendix for endangered species?	☐ Yes	☐ No

4. The production phase

Has an Environmental Product Declaration (EPD) been prepared?	☐ Yes	☒ No
If yes, enclose the EPD (Environmental Product Declaration) or other environmental product declaration together with the application.		

5. Distribution of the completed product

Describe the management of packaging for the distribution of the product *State whether any system for taking back or recycling packaging or any other specific return system is used.* *Specify the packaging material used and which system of producer responsibility for packaging the supplier is affiliated to.* *Enter the proportion of recycled material, if any, included in the packaging.*	Description of the packaging: No system for taking back or recycling of packaging. All products are in cardboard box.
Other information:	

6. Construction and usage phase

Are there any special requirements such as storage conditions etc. for the product during storage?	☒ Yes		☐ No
If yes, describe: To be stored indoor			
Are there any special requirements for adjacent building products because of this product?	☐ Yes		☒ No
If yes, describe:			
Are there any operating/care instructions for the product?	☐ Yes		☒ No
If yes, attach the documentation with the application.			
Is the product energy labelled in accordance with the Energy Labelling Directive (2010/30/EU)?	☐ Yes	☒ No	☐ Not relevant
If yes, state class (G to A, A+, A++, A+++):	Class:		

7. Waste management

Does the product require special measures to protect health and the environment in conjunction with demolition/dismantling?	☐ Yes	☒ No
If yes, describe:		
Is the product covered by the WEEE-directive 2012/19/EU (Swedish ordinance (2014:1075) on Producer Responsibility for electrical and electronic products when it becomes waste?	☐ Yes	☒ No
Is it possible to re-use all or parts of the product? (can the product be reused within the product's expected lifetime)?	☐ Yes	☒ No
If yes, describe:		
Is material recycling possible for all or parts of the product when it becomes waste?	☒ Yes	☐ No
If yes, describe: All metal parts can be re-melted and used as new raw material All plastic parts can be re-grinded and used as new raw material		
Is energy recycling possible for all or parts of the product when it becomes waste?	☒ Yes	☐ No
Does the supplier have any restrictions and recommendations for reuse, material- or energy recycling or disposal?	☒ Yes	☐ No
If yes, specify which: All metal parts can be re-melted and used as new raw material All plastic parts can either be re-grinded and used as new raw material or burned to give energy		
When the supplied product becomes waste, is it classified as hazardous waste?	☐ Yes	☒ No
If yes, specify the waste code: The Swedish waste ordinance (2011:927) *https://www.notisum.se/rnp/sls/lag/20110927.htm*	Waste code:	

8. Indoor environment

Has the product a critical moisture condition: *Information regarding whether critical moisture conditions leading to microbial growth apply for the material/product should be stated, but will not impact the assessment.*	☐ Yes	☒ No
If yes, specify which:		
Is the product intended for use indoors?	☒ Yes	☐ No
If yes, has emission data been produced for volatile organic compounds?	☐ Yes	☒ No
If yes, attach the report/certificate together with the application.		
If no, is there any motivation for why emission data for volatile organic compounds is not relevant for the product?	Motivation: Mechanical product without any emission	
Is the product a chemical product intended for indoor use?	☐ Yes	☒ No
If yes, has emission data been produced for volatile organic compounds?	☐ Yes	☐ No
If yes, attach the report/certificate together with the application.		
If no, is there any motivation for why emission data for volatile organic compounds is not relevant for the product?	Motivation: Mechanical product without any emission	

Certificate of substance content and concentrations version. 4.0

This certificate is required for the Recommended assessment level for chemical contents. This page should be printed to be signed and uploaded separately in PDF-format in connection with the application.

Certificate of declaration of substance content

For the products specified below, with their stated article numbers, the following is certified: *Choose whether to certify alternative A or B.*	
A ☐	It is hereby certified that concentrations of the included substances **down to 0.01 weight%** have been reported, and that cadmium and mercury do not occur in the product. or: The substances included are reported in line with the instructions for the Declaration of Contents, BVB's reporting requirements 2016-1, and correspond to the reporting requirements for the **Recommended** level.
B ☒	It is hereby certified that concentrations of the included substances **down to 0.1 weight%** have been reported, and that cadmium and mercury do not occur in the product. or: The substances included are reported in line with the instructions for the Declaration of Contents, BVB's reporting requirements 2016-1, and correspond to the reporting requirements for the **Accepted** level.
For the products specified below, with their stated article numbers, the following is certified: *Choose whether to certify alternative C or D.*	
C ☒	It is hereby certified that the specified product/s do not contain specifically indicated substances and groups of substances in accordance with Table 4, Specifically indicated substances. These have not been added during production and have not been formed through reactions between the substances in the product.
D ☐	Unfortunately, we have to notify that the specified products contain specifically indicated substances in accordance with Table 4, Specifically indicated substances. Some of these substances have been added or been formed during reaction between the substances in the product, please see the Declaration of Contents.

Table 4, Specifically indicated substances

Substance group/Substance	Examples of properties
1. Arsenic and its compounds[1]	Toxic, Environmentally hazardous
2. Brominated flame retardants	Potentially PBT/vPvB, PBT/vPvB
3. PFOA (perfluorooctanioic acid)	Persistent, bioaccumulative, probable reproductive toxicity
4. PFOS (perfluorooctanesulfonates)	Potentially PBT/vPvB, PBT/vPvB
5. Organotin compounds	Potentially PBT/vPvB, PBT/vPvB, Toxic, Environmentally hazardous
6. Biocidal product applied on products (surface treatments) to provide a disinfectant or anti-bacterial effect.	Toxic, Environmentally hazardous

Product identification: *(designation and article number)*	013G0054; 013G0071; 013G0072; 013G0073; 013G0074; 013G0075; 013G0076; 013G0037; 013G0038; 013G3011; 013G3013; 013G3015; 013G3022; 013G4022
State reference (name and version/date) that contains the actual Declaration of Contents:	
Person responsible for making declaration:	Benthe Thyboe-Thomsen R&D Director
Signature:	Benthe Thyboe-Thomsen
Place and date (year, month, day):	2016-09-30

[1] Arsenic, or arsenic compounds, are not permitted to be added to the product. Contamination of used raw materials is not permitted to exceed 10 mg/kg. The concentration limit is set based on regulatory requirements for soil quality to ensure that accepted products do not raise background concentrations through their use or disposal (for example; sludge from sewage treatment works Swedish Ordinance 1998:944, Section 20). The same concentration limits are found in the Swedish Environmental Protection Agency's general guidelines for less sensitive land use (MKM).

Declaration of contents, BVB's declaration requirements, 2016-1

A complete declaration of contents in accordance with the instructions should be made for both products and chemical products. For products, minimum concentrations have to be reported as a weight% for the entire product. The contents can be provided in other documentation, if the reporting instructions are complied with, or alternatively supplemented so that they are in compliance. Reporting requirements for the Accepted level correspond to the requirements for "e-BVD2015".

For the Accepted and Recommended levels, classified substances are needed to be reported in the documentation if concentrations exceed limits (weight%) in accordance with *Table 5, Classified substances.* Those substances that are not included in Table 5 must be reported when concentrations of ≥2% occur.

Material and substance contains can be provided in intervals. Examples of accepted intervals are: ≤1%, 1-2.5%, 2.5-10%, 10-25%, 25-50%, 50-75%, 75-100%. In occasion of large intervals, state the reason for the variance and describe what materials/substances increase or decrease in proportion if the product, for example, comes in different sizes.

If classification is applied that is not covered by harmonized classification, this information requires to be reported in the comments column for that substance.

Table 5, Classified substances

Hazard class	**Reporting limit**	
	Accepted	**Recommended**
Carcinogenic categories 1A and 1B (H350)	≥ 0.1%	≥ 0.01%
Carcinogenic category 2 (H351)	≥ 1%	≥ 0.1%
Mutagenic categories 1A and 1B (H340)	≥ 0.1%	≥ 0.01%
Mutagenic category 2 (H341)	≥ 1%	≥ 0.1%
Reproductive toxicity, categories 1A and 1B (H360)	≥ 0.3%	≥ 0.03%
Reproductive toxicity, category 2 (H361)	≥ 2%	≥ 0.3%
Reproductive toxicity effects on or through breastfeeding (H362)	≥ 0.3%	≥ 0.03%
Endocrine disruptors [1, 2]	≥ 0.1%	≥ 0.01%
PBT and/or vPvB [3]	≥ 0.1%	≥ 0.01%
Skin sensitizers (H317)	≥ 1%	≥ 0.1%
Respiratory sensitizers (H334)	≥ 0.2%	≥ 0.02%
Hazardous to aquatic environments, chronic category 1 (H410)	≥ 2%	≥ 0.25%
Ozone depleting substances (EUH 059 and H420)	≥ 0.1%	≥ 0.01%
Acute toxicity category 1 (H300, H310, H330, H301, H311 and/or H331)	≥ 0.1%	≥ 0.01%
Acute toxicity category 2 (H300, H310, H330, H301, H311 and/or H331)	≥ 1%	≥ 0.1%
Acute toxicity category 3 (H300, H310, H330, H301, H311 and/or H331)	≥ 2%	≥ 1%
Pure or compounds of cadmium (Cd)	≥ 0.01%	≥ 0.001%
Pure or compounds of lead (Pb)	≥ 0.1%	≥ 0.01%
Pure or compounds of mercury (Hg)	Contamination ≥ 2.5 mg/kg (ppm) of active additives must always be reported.	
[1]Endocrine disruptors (EDS list)	≥ 0.1%	≥ 0.01%
[2]Endocrine disruptors (SIN list)		≥ 0.01%
[3]PBT, vPvB (SIN list)	≥ 0.1%	≥ 0.01%
Candidate List	≥0.1%*	≥ 0.01%
Other classifications or unclassified substances and material	≥ 2%	≥ 2%

*Substances on the Candidate List have to be reported at component level.

Descriptions of material

Substances should be reported with their CAS- or EC number. Exemptions for certain material can be performed in accordance with the following instructions.

Metals should always be reported together with their alloy number. Alternatively, substances comprising more than 0.01% of the alloy has to be specified in the documentation.

Plastics and rubber materials should be reported together with their name so that it is clearly which monomers that are included, for example, acrylonitrile butadiene styrene (ABS), polyethylene (PE), etc. Additives that have not formed polymers should always be reported in accordance with Table 5 (for example pigments, plasticizers, stabilizers, etc.). BVB always requires that compounds used as plasticizers is declared for PVC plastics (≥ 2%).

Plastics/polymers with descriptions in line with the following list are accepted without specification of monomers.

- Polycarbonate (pertains to bisphenol A based polycarbonates)
- Polyester (monomers must be specified for halogenated polyesters)
- Polyurethane (monomers must be specified for halogenated polyurethanes)
- Fiberglass reinforced epoxy resin laminates FR4 (pertains to tetrabromobisphenol A based polymers)

Other materials with the following descriptions are accepted without clarification or detailed description of their components as the materials normally consist of:

- Glass
- Concrete

Examples of designations of plastics/polymers and other material descriptions that require further clarification are:

- Dispersion polymerization
- Copolymer
- Thermoplastic elastomers (TPE)
- Thermoplastics
- MS polymers
- Mineral fillers

References can be given for composite products to other products (subcomponents) that have been assessed in BVB's system and which have been provided with a BVB ID.

Complex products can be referred to another product (subcomponent), which are estimated in BVB´s systems and provided with BVB ID.

Datablad
Ventilhus RA 2000
Ventil RA-N/RA-U med förinställning

V2-10D

Användning

027

Certifierade enligt
EN 215

RA-N

RA-N vinkel

RA-N, UK

RA-U

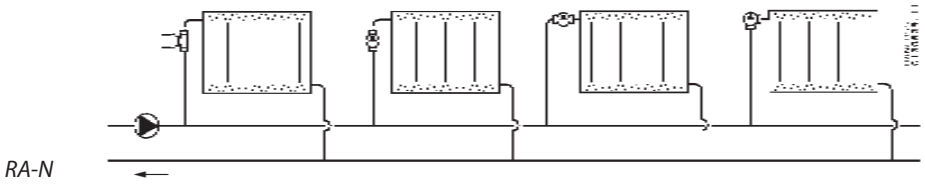
Inbyggnadsmått enligt Euronormen HD 1215-2 serie S. Tekniska data för RA 2000 uppfyller kraven i EN 215-1.

Om det är nödvändigt att tillsätta kemikalier i det cirkulerande vattnet för att minska kalkavsättning och korrosion är det viktigt att leverantörens anvisningar följs.

- Ventil RA-N/RA-U är anpassad för 2-rörssystem med pumpcirkulation.
- Ventil RA-N/RA-U har inbyggd förinställning.

Ventilerna ska inte monteras i reglersystem för tappvarmvatten.

Princip



RA-N

Montering av termostatventiler

1. **Byte av ventilhus**
   Andra åtgärder som ska göras i värmesystemet
   Montera filter
   Vid behov spola rent värmesystemet
2. **Fyll på vatten**
3. **Stäng pumpen**
4. **Lufta systemet**
5. **Koka av systemet**
6. **Lufta systemet**
7. **Ställ in strypvärdet på ventilerna**
8. **Montera termostaten**

Är värmeanläggningen uppdelad på flera stammar, eller kan strömningsljud förekomma på grund av för höga differenstryck, rekommenderas Danfoss differenstrycksregulatorer.
Max differenstryck för undvikande av strömningsljud 30 kPa = 0,3 bar för RA-N.

Beställningsnummer och data

RA-N ventiler

Typ	Ansl.	Utförande	K_V-område [4]								K_{VS}	**Best nr**	RSK nr
			1	2	3	4	5	6	7	N			
RA-N 10 [1]	10	Vinkel	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G0071**	481 82 33
RA-N 10 [1]	10	Rak	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G0072**	481 82 09
RA-N 10 UK [1]	10	Omv vinkel	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G3011**	481 82 66
RA-N 15 [1]	15	Vinkel	0,04	0,08	0,12	0,20	0,30	0,40	0,51	0,73	0,90	**013G0073**	481 82 41
RA-N 15 [1]	15	Rak	0,04	0,08	0,12	0,20	0,30	0,40	0,51	0,73	0,90	**013G0074**	481 82 17
RA-N 15 UK [1]	15	Omv vinkel	0,04	0,08	0,12	0,20	0,30	0,40	0,51	0,73	0,90	**013G3013**	481 82 74
RA-N 20 [2]	20	Vinkel	0,10	0,17	0,19	0,30	0,42	0,62	0,80	1,17	1,58	**013G0075**	481 82 58
RA-N 20 [2]	20	Rak	0,10	0,17	0,19	0,30	0,42	0,62	0,80	1,17	1,58	**013G0076**	481 82 25
RA-N 20 UK [2]	20	Omv vinkel	0,08	0,16	0,24	0,36	0,52	0,69	0,82	0,85	1,03	**013G3015**	481 82 82
RA-N 25 [3]	25	Vinkel	0,10	0,15	0,17	0,26	0,35	0,46	0,73	1,04	1,40	**013G0037**	481 83 99
RA-N 25 [3]	25	Rak	0,10	0,15	0,17	0,26	0,35	0,46	0,73	1,04	1,40	**013G0038**	481 83 81
RA-N 10 [1]	10	Vinkel m låsning	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G4021**	481 82 06
RA-N 10 [1]	10	Rak m låsning	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G4022**	481 82 07

RA-U ventil

Typ	Anslutning	Utförande	K_V-område [4]												K_{VS}	**Best nr**	RSK nr
			1	2	3	4	5	6	7	8	9	10	11	N			
RA-U	10	Rak	0,016	0,025	0,035	0,05	0,06	0,08	0,10	0,12	0,16	0,21	0,26	0,30	0,32	**013G3022**	481 82 08

[1] Exkl kopplingsdetaljer. Kan förses med kompressionskopplingar på tillopp. Se tillbehör.
[2] Exkl kopplingsdetaljer.
[3] Utförande enligt HD 1215-2 Serie D inkl kopplingsdetaljer.
[4] K_v-värdena anger genomströmningsmängden (Q) i m^3/h vid en given lyfthöjd och ett tryckfall (Δp) över ventilen på 1 bar (100 kPa). Vid inställning N anges k_v-värdet enligt EN 215-1 vid Xp = 2°C (P-band). Vid lägre inställningsvärden minskar Xp ned till 0,5 °C vid inställning 1. Vid inställningar mellan 1 och N ligger Xp således mellan 0,5°C och 2°C. Xp = 2°C betyder att ventilen är stängd vid en temperatur 2°C över inställt värde. K_{vs}-värdet anger flödet vid full lyfthöjd, d.v.s. fullt öppen ventil.

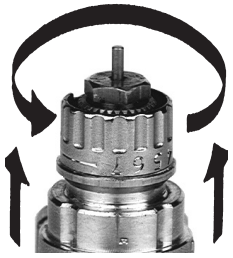
Tillbehör

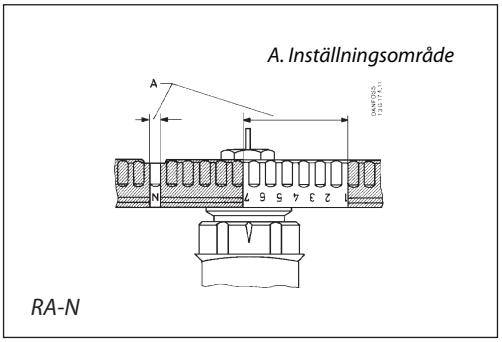
Nipplar, muttrar och kompressionskopplingar till RA-N/RA-U ventiler

Benämning	Avsedd för	Anslutning	**Best nr**	RSK nr	
Rak nippel	RA-N 10	10 (3/8″)	**013L0962**		Mutter: **013L0967**
Rak nippel	RA-N 15	15 (1/2″)	**013L0964**		Mutter: **013L0969**
Rak nippel	RA-N 20	20 (3/4″)	**013L0930**		Mutter: **013L0939**
Kompressionskoppling	RA-N 10	3/8″ x Ø10	**013G4100** [1]		
Kompressionskoppling	RA-N 10	3/8″ x Ø12	**013G4102** [1]	480 38 89	
Kompressionskoppling	RA-N 15	1/2″ x Ø12	**013L0288** [1]	481 88 45	
Kompressionskoppling	RA-N 15	1/2″ x Ø15	**013L0289** [1]	481 88 52	
Inställningsnyckel	RA-U		**013G3030**	481 82 05	

[1] Levereras i sats om 10 st.

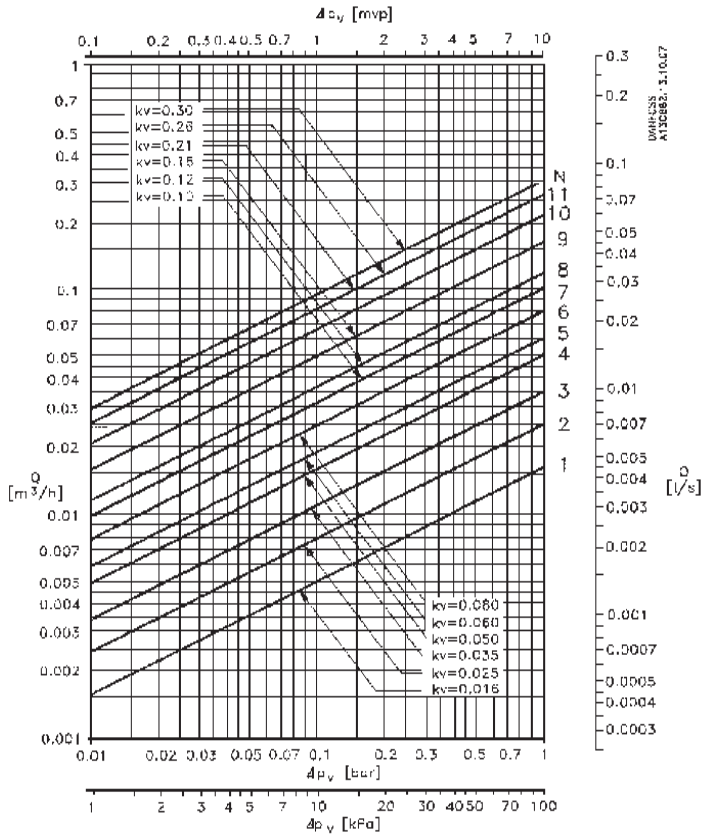
Inställning av variabel ventilkapacitet



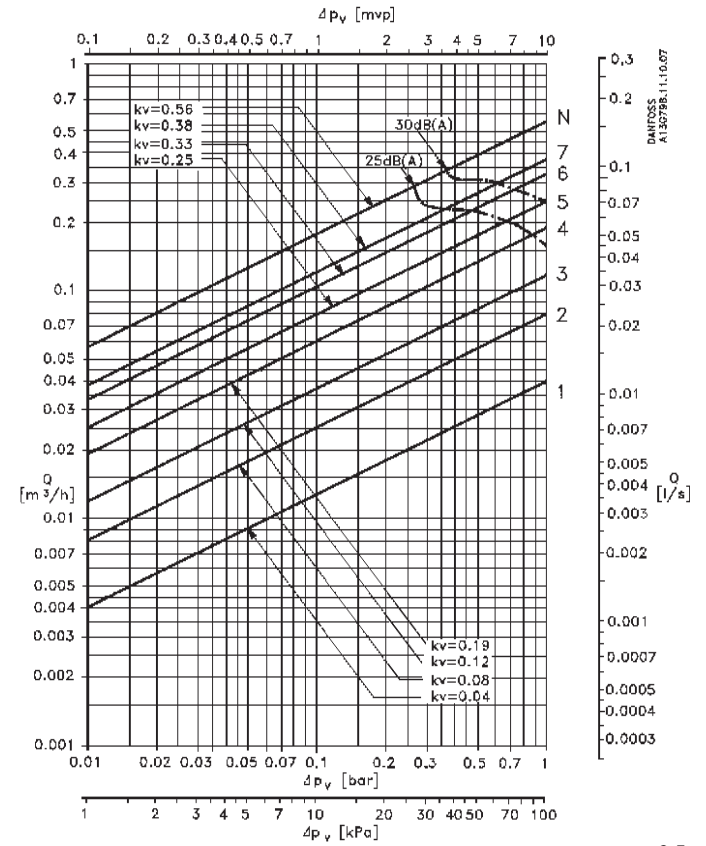


RA-N/RA-U ventilen ger möjlighet till justering av kapaciteten.

- Ventilens kapacitet justeras genom att lyfta skalringen och vrida den till önskad inställ-ning.
- RA-N: Förinställningsvärdena kan väljas i halva steg mellan MIN - 7 (RA-U: MIN - 11).
  MIN är två hack under inställningstal 1. Vid inställningen N är ventilen helt öppen.
  Området som blir utanför inställningen bör inte användas. Streckat område.
- I kapacitetsdiagrammen framgår ventilernas kapacitet.

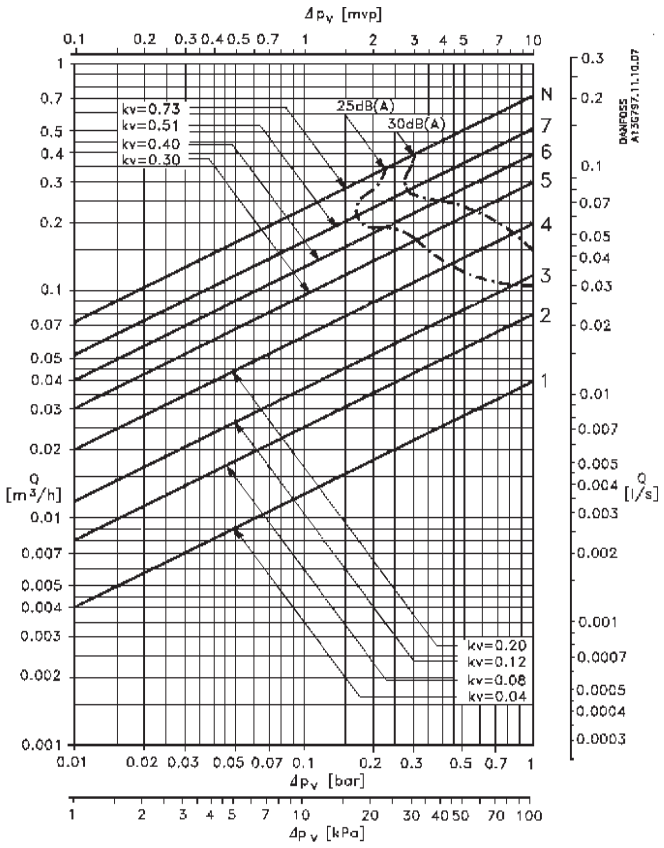


RA-U

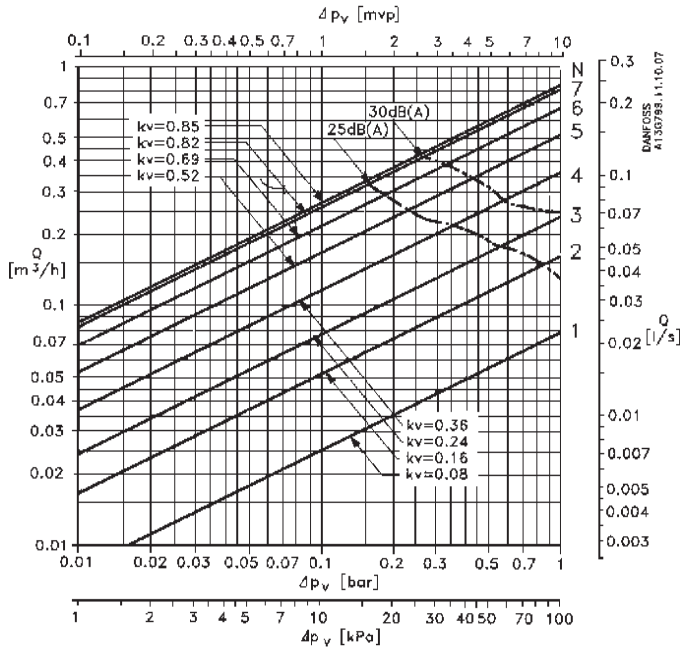


RA-N 10

0,5 < Xp < 2°C

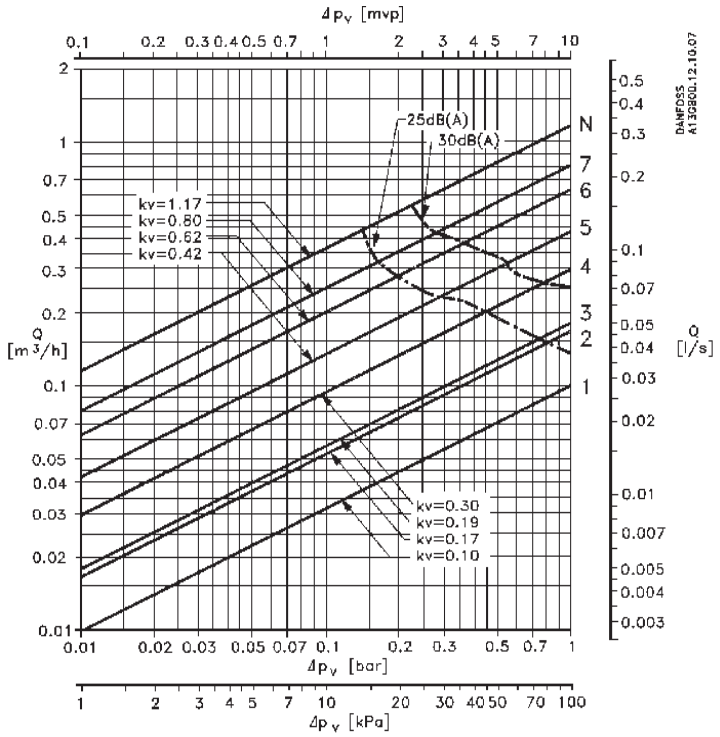


RA-N 15

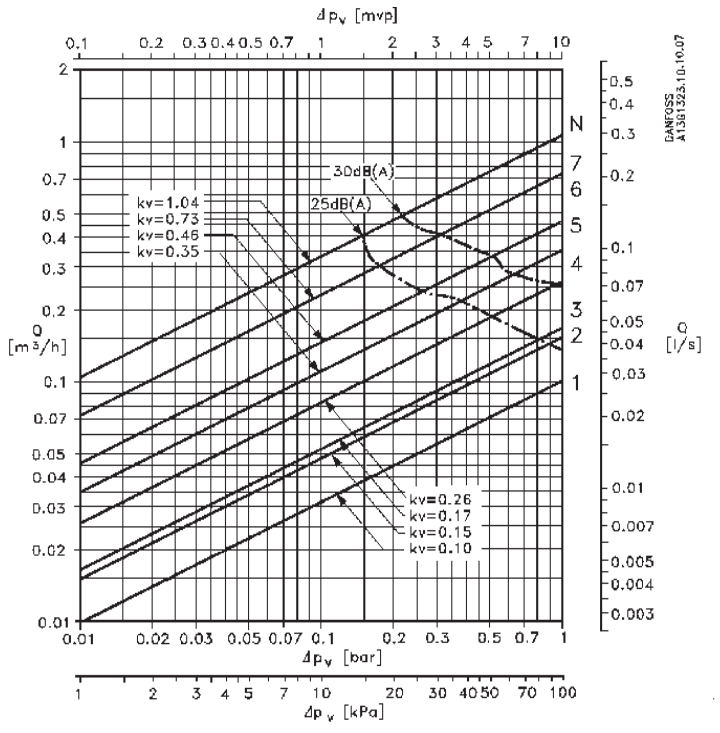


RA-N 20 UK

0,5 < Xp < 2°C



RA-N 20



RA-N 25

0,5 < Xp < 2°C

Dimensioneringsexempel för RA-N

Q = 0,025 m^3/h
(vattenmängd genom radiatorn).

Δp_V = 10 kPa
(erforderligt tryckfall över ventilen).

Gå in i k_V-diagrammet, t ex RA-N 10 sid 3, vid 0,025 m^3/h. Drag en vågrät linje över hela diagrammet. Drag sedan en lodrät linje för tryckfallet 10 kPa så att den korsar den vågräta linjen. Avläs k_V-värdet på de sneda linjerna. Linjerna korsar varandra på linjen för k_V-värde 0,08. Gå sedan in i k_V-tabellen och sök k_V-värdet 0,08.

RA-N 10 får inställningsvärde 2
RA-N 15 får inställningsvärde 2

Vid mindre inställningsvärde än valt k_V-värde minskas P-bandet.

Vid tryckfallsberäkning kan lämpligt dimen-sioneringsområde vara mellan 3 och 20 kPa.

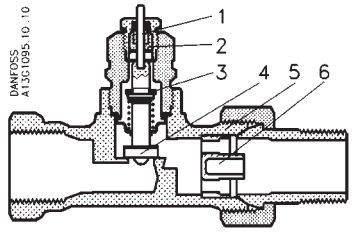
Mätvillkor för ljudkurvor

Provrum:	ISO 3743 (L: 5,3 x B: 4,9 x H: 2,6 m)
Efterklangstid:	1 sekund
Bakgrundsljud:	L_p 13 - 15 dB(A)
Radiator:	DIN 4722, Typ 500/160, H x B: 550 x 1500 mm
Mikrofonavstånd:	1,2 m från ventil
Ljudnivå:	Ljudtrycksnivå L_p dB(A)

Typ	RA-N 10	RA-N 15	RA-N 20	RA-N 20 UK
Inställningsvärden	k_V-värde: m^3/h vid Δp = 1 bar			
Min	0,01	0,01		
0,5	0,03	0,03		
1,0	0,04	0,04	0,10	0,08
1,5	0,06	0,06	0,14	0,12
2,0	0,08	0,08	0,17	0,16
2,5	0,10	0,10	0,18	0,20
3,0	0,12	0,12	0,19	0,24
3,5	0,16	0,16	0,25	0,30
4,0	0,19	0,20	0,30	0,36
4,5	0,22	0,25	0,36	0,44
5,0	0,25	0,30	0,42	0,52
5,5	0,29	0,35	0,52	0,61
6,0	0,33	0,40	0,62	0,69
6,5	0,36	0,46	0,71	0,76
7,0	0,38	0,51	0,80	0,82
N	0,56	0,73	1,17	0,85
k_{VS}	0,65	0,90	1,58	1,03

0,5 °C ≤ X_P ≤ 2,0 °C

Konstruktion



1. Tryckstift
2. O-ringspackbox
3. Inställningsslöja
4. Ventilkägla
5. Ventilhus
6. Dysa

RA-N

Radiatortermostaten består av termostat RA 2000 och ventil RA. Delarna beställs var för sig. Ventilens packbox kan bytas under drift.

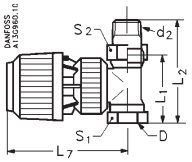
Material i vattenberörda delar

Ventil och övriga metalldelar	Ms 58
Begränsningshylsa	PPS
O-ring	EPDM
Ventilkägla	NBR
Tryckstift och ventilfjäder	Kromstål
Ljuddämparinsats (ej RA-G)	PP
Ventilhus	Utvändigt förnicklat

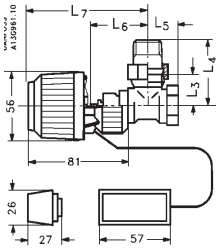
Max omgivningstemp., termostat	60 °C
Max mediatemperatur	120 °C
Max arbetstryck	1000 kPa
Max differenstryck: RA-N/RA-U	60 kPa*)
Max diff.tryck för ljud: RA-N	30 kPa
Max diff.tryck för ljud: RA-U	20 kPa
Rekommenderat tryckfall	10 kPa
Provtryck	1600 kPa
Eurogodkännande	EN-215

*) Max differenstryck anger det maximala tryck vid vilket ventilerna ger en tillfredsställande reglering. Dessa gränser tar ej hänsyn till ev. oljud. Erfarenheten visar att i de flesta anläggningar är ett diff.tryck på 10-30 kPa tillräckligt.

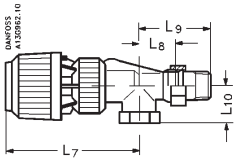
Mått



RA-N/RA-U



RA-N vinkel



RA-N (UK)

Typ	Anslutning				L_1	L_2	L_3	L_4	L_5	L_6	L_8	L_{10}	S_1	S_2
	DN	D	d_1	d_2										
RA-N 10	10	R_p 3/8″	M22 x 1,5	-	50	-	23	-	20	45	-	-	23	-
RA-N 10 UK	10	R_p 3/8″	M22 x 1,5	-	-	-	-	-	-	59	26	22	22	-
RA-N 15	15	R_p 1/2″	M26 x 1,5	-	58	-	26	-	24	45	-	-	27	-
RA-N 15 UK	15	R_p 1/2″	M26 x 1,5	-	-	-	-	-	-	60	29	26	27	-
RA-N 20	20	R_p 3/4″	M34 x 1,5	-	68	-	31	-	28	50	-	-	34	-
RA-N 20 UK	20	R_p 3/4″	M34 x 1,5	-	-	-	-	-	-	61	34	29	32	-
RA-N 25	25	R_p 1″		R 1″	90	-	40	-	34	47	-	-	41	-

Danfoss AB
SE-595 82 Mjölby
Industrigatan 7
Tfn 0142-885 00
Fax 0142-885 09
www.danfoss.se

SE-200 39 Malmö
Stenåldersgatan 2
Box 9153
Tfn 040-671 25 50
Fax 040-21 49 75

SE-100 73 Stockholm
Sjöviksbacken 24
Box 44049
Tfn 08-775 42 00
Fax 08-775 42 42

SE-906 20 Umeå
Kylgränd 6

Tfn 090-71 69 90
Fax 090-18 70 30

SE-431 53 Mölndal
Johannefredsgatan 4

Tfn 031-86 84 60
Fax 031-86 84 69

Byggvarubedömningen's guideline and information requirements for assessment of product, Version 2016-1.

These guidelines describe what information that Byggvarubedömningen requires for assessment of articles and chemical products. Information about the article or chemical product can be provided in this document, alternatively refer to another documentation in which the corresponding information is given.

1. Product information

Product

Product name:	Radiator valves	
Article No.: *Specify the type of number, for example RSK, E number, EAN, GTIN or supplier's article number. This should also be stated on the application.*	013G0054; 013G0071; 013G0072; 013G0073; 013G0074; 013G0075; 013G0076; 013G0037; 013G0038; 013G3011; 013G3013; 013G3015; 013G3022; 013G4022	
Product description: *On application, please attach a product data sheet or similar documentation.*	Radiator valves for water based heating systems. To be mounted on radiators, convectors, e.g.	
Type of product:	☐ Chemical product	☒ Article
Date (year, month, day) of preparation/revision:	2016-09-30	

Supplier/Manufacturer

Supplier:	Danfoss
Manufacturer if other than the supplier: *Voluntary information*	
Supplier contact:	Anders Gustavsson
Address:	Danfoss AB SE 58199 Linköping
E-mail:	anders.gustavsson@danfoss.com
Phone number:	+46 1325 8586

Supporting documentation

Has a declaration of performance, in line with the Swedish Construction Products Regulation, been prepared for the product?	☐ Yes	☒ No
If yes, attach the declaration of performance with the application		
Is the article/product an electronic product and covered by the RoHS-directive (2011/65/EU)?	☐ Yes	☒ No
If yes, attach an "EU Declaration of Conformity", or alternatively another certificate that attests that the product corresponds to the requirements according to the RoHS-directive (2011/65/EU), together with the application		
If the article/product is an electronic product that is covered by an exemption according to RoHS-directive (2011/65/EU), specify which exemption and date (year, month, day) when the exemption expires if time-limited:	Exemptions according to RoHS: Date:	

2. Declaration of contents:

Does the product or any of its subcomponents, if it is a composite product, contain substances with particularly hazardous properties (Substances of Very High Concern, SVHC-substances), which are included in the Candidate List at a concentration above 0.1 weight%?	☐ Yes	☒ No
If yes, specify which substances in Table 1.		
State the date (year, month, day) for control the Candidate List.	Date: 2016-09-30	
The concentration is calculated at component level established on the principle "once a product, always a product" principle. The Candidate List is available at: *http://echa.europa.eu/sv/candidate-list-table.*		

Specify the total content of the article or the chemical product, ***on delivery,*** in Table 1, or alternatively attach other documentation that provides the corresponding information. For instructions, please refer to the "Declaration of contents, BVB's declaration requirements, 2016-1", which is found at the end of this document.

Table 1, Contents of included substances and material (declaration of content in accordance with requirements)

Included substances and material	**EG No./CAS No.** *(alternatively alloy)*	**Weight%** *(of entire product)*	*When applicable,* **state for which subcomponent**	**Weight%** *(of substance in subcomponent)*	**Comments** *(state eventual application of non-harmonized classifications)*
Brass	**CW614N/CW617N**	**92-97%**			
Plastic	**PP, 30%GF**	**2-5%**			
Plastic	**PPS, 40%GF**	**2-5%**			
Rubber	**NBR/EPDM**	**<1%**			
Stainless steel	**1.4310**	**1-2%**			
Tinbronze	**CW452K**	**<1%**			
Zink	**Z410**	**<1%**			
Grease	**Syntheso Proba 330**	**<1%**			
Grease	**Unisilkon L641**	**<1%**			

Are all substances reported in percentages down to 0.01% in Table 1? *(enable assessment with regard to the Recommended level)*	☐ Yes	☒ No
If not, does the report fulfill the instructions for the Accepted level, which is described in "Declaration of contents, BVB's declaration requirements, 2016-1" , which is found at the end of this document	☒ Yes	☐ No
If any deviations from BVB's reporting requirements exist, specify these in the comments in Table 1, or alternatively here.	Other comments:	

If the chemical composition differs after application, then the content of the applied product is given in Table 2. This applies to chemical products. If the content is unchanged, no information needs to be provided in the table.

Table 2, Contents for applied products (full content in accordance with declaration requirements)

Included substances and material	**EG No./CAS No.**	**Weight%** *(of the applied product)*	**Comments** *(state any application of non-harmonized classifications)*

If any deviations from BVB's reporting requirements exist, specify these in the comments in Table 2, or alternatively here.	Other comments:

Nanomaterial

Does the product contain any nanomaterial that has been purposefully added to achieve a specific function? *Information regarding whether nanomaterial has been added to achieve a specific function must be stated, but has no impact on the assessment.*	☐ Yes	☒ No
If yes, specify the material.	Material:	

3. Recycled raw material

Does the product contain recycled material?	☐ Yes	☒ No
If yes, fill in Table 3.		

If the product consists of recycled materials specify the material and the percentages of the total weight of the product, in *Table 3, Recycled materials.*

Table 3, Recycled material

Material	**Percentage (%)** *of the total product's weight*	**Percentage (%)** *of the recycled material that has not reached the consumer level, such as production waste, etc. (pre-consumer)*	**Percentage (%)** *of the recycled material that has reached the consumer level (post-consumer)*	**Comments**

If wood raw material is included

Can the product be ordered with sustainability certificates for the wood raw material? *E.g.: FSC and PEFC*	☐ Yes	☐ No
Explain if the certificate does not cover all of the wood raw material:		
If yes, attach a certificate/assurance that the product can be ordered with a sustainability certificate together with the application.		
If no, state the country where the wood raw material was harvested.	Country of harvest:	
Is the wood species or origin in the CITES appendix for endangered species?	☐ Yes	☐ No

4. The production phase

Has an Environmental Product Declaration (EPD) been prepared?	☐ Yes	☒ No
If yes, enclose the EPD (Environmental Product Declaration) or other environmental product declaration together with the application.		

5. Distribution of the completed product

Describe the management of packaging for the distribution of the product *State whether any system for taking back or recycling packaging or any other specific return system is used.* *Specify the packaging material used and which system of producer responsibility for packaging the supplier is affiliated to.* *Enter the proportion of recycled material, if any, included in the packaging.*	Description of the packaging: No system for taking back or recycling of packaging. All products are in cardboard box.
Other information:	

6. Construction and usage phase

Are there any special requirements such as storage conditions etc. for the product during storage?	☒ Yes		☐ No
If yes, describe: To be stored indoor			
Are there any special requirements for adjacent building products because of this product?	☐ Yes		☒ No
If yes, describe:			
Are there any operating/care instructions for the product?	☐ Yes		☒ No
If yes, attach the documentation with the application.			
Is the product energy labelled in accordance with the Energy Labelling Directive (2010/30/EU)?	☐ Yes	☒ No	☐ Not relevant
If yes, state class (G to A, A+, A++, A+++):	Class:		

7. Waste management

Does the product require special measures to protect health and the environment in conjunction with demolition/dismantling?	☐ Yes	☒ No
If yes, describe:		
Is the product covered by the WEEE-directive 2012/19/EU (Swedish ordinance (2014:1075) on Producer Responsibility for electrical and electronic products when it becomes waste?	☐ Yes	☒ No
Is it possible to re-use all or parts of the product? (can the product be reused within the product's expected lifetime)?	☐ Yes	☒ No
If yes, describe:		
Is material recycling possible for all or parts of the product when it becomes waste?	☒ Yes	☐ No
If yes, describe: All metal parts can be re-melted and used as new raw material All plastic parts can be re-grinded and used as new raw material		
Is energy recycling possible for all or parts of the product when it becomes waste?	☒ Yes	☐ No
Does the supplier have any restrictions and recommendations for reuse, material- or energy recycling or disposal?	☒ Yes	☐ No
If yes, specify which: All metal parts can be re-melted and used as new raw material All plastic parts can either be re-grinded and used as new raw material or burned to give energy		
When the supplied product becomes waste, is it classified as hazardous waste?	☐ Yes	☒ No
If yes, specify the waste code: The Swedish waste ordinance (2011:927) *https://www.notisum.se/rnp/sls/lag/20110927.htm*	Waste code:	

8. Indoor environment

Has the product a critical moisture condition: *Information regarding whether critical moisture conditions leading to microbial growth apply for the material/product should be stated, but will not impact the assessment.*	☐ Yes	☒ No
If yes, specify which:		
Is the product intended for use indoors?	☒ Yes	☐ No
If yes, has emission data been produced for volatile organic compounds?	☐ Yes	☒ No
If yes, attach the report/certificate together with the application.		
If no, is there any motivation for why emission data for volatile organic compounds is not relevant for the product?	Motivation: Mechanical product without any emission	
Is the product a chemical product intended for indoor use?	☐ Yes	☒ No
If yes, has emission data been produced for volatile organic compounds?	☐ Yes	☐ No
If yes, attach the report/certificate together with the application.		
If no, is there any motivation for why emission data for volatile organic compounds is not relevant for the product?	Motivation: Mechanical product without any emission	

Certificate of substance content and concentrations version. 4.0

This certificate is required for the Recommended assessment level for chemical contents. This page should be printed to be signed and uploaded separately in PDF-format in connection with the application.

Certificate of declaration of substance content

For the products specified below, with their stated article numbers, the following is certified: *Choose whether to certify alternative A or B.*	
A ☐	It is hereby certified that concentrations of the included substances **down to 0.01 weight%** have been reported, and that cadmium and mercury do not occur in the product. or: The substances included are reported in line with the instructions for the Declaration of Contents, BVB's reporting requirements 2016-1, and correspond to the reporting requirements for the **Recommended** level.
B ☒	It is hereby certified that concentrations of the included substances **down to 0.1 weight%** have been reported, and that cadmium and mercury do not occur in the product. or: The substances included are reported in line with the instructions for the Declaration of Contents, BVB's reporting requirements 2016-1, and correspond to the reporting requirements for the **Accepted** level.
For the products specified below, with their stated article numbers, the following is certified: *Choose whether to certify alternative C or D.*	
C ☒	It is hereby certified that the specified product/s do not contain specifically indicated substances and groups of substances in accordance with Table 4, Specifically indicated substances. These have not been added during production and have not been formed through reactions between the substances in the product.
D ☐	Unfortunately, we have to notify that the specified products contain specifically indicated substances in accordance with Table 4, Specifically indicated substances. Some of these substances have been added or been formed during reaction between the substances in the product, please see the Declaration of Contents.

Table 4, Specifically indicated substances

Substance group/Substance	Examples of properties
1. Arsenic and its compounds[1]	Toxic, Environmentally hazardous
2. Brominated flame retardants	Potentially PBT/vPvB, PBT/vPvB
3. PFOA (perfluorooctanioic acid)	Persistent, bioaccumulative, probable reproductive toxicity
4. PFOS (perfluorooctanesulfonates)	Potentially PBT/vPvB, PBT/vPvB
5. Organotin compounds	Potentially PBT/vPvB, PBT/vPvB, Toxic, Environmentally hazardous
6. Biocidal product applied on products (surface treatments) to provide a disinfectant or anti-bacterial effect.	Toxic, Environmentally hazardous

Product identification: *(designation and article number)*	013G0054; 013G0071; 013G0072; 013G0073; 013G0074; 013G0075; 013G0076; 013G0037; 013G0038; 013G3011; 013G3013; 013G3015; 013G3022; 013G4022
State reference (name and version/date) that contains the actual Declaration of Contents:	
Person responsible for making declaration:	Benthe Thyboe-Thomsen R&D Director
Signature:	Benthe Thyboe-Thomsen
Place and date (year, month, day):	2016-09-30

[1] Arsenic, or arsenic compounds, are not permitted to be added to the product. Contamination of used raw materials is not permitted to exceed 10 mg/kg. The concentration limit is set based on regulatory requirements for soil quality to ensure that accepted products do not raise background concentrations through their use or disposal (for example; sludge from sewage treatment works Swedish Ordinance 1998:944, Section 20). The same concentration limits are found in the Swedish Environmental Protection Agency's general guidelines for less sensitive land use (MKM).

Declaration of contents, BVB's declaration requirements, 2016-1

A complete declaration of contents in accordance with the instructions should be made for both products and chemical products. For products, minimum concentrations have to be reported as a weight% for the entire product. The contents can be provided in other documentation, if the reporting instructions are complied with, or alternatively supplemented so that they are in compliance. Reporting requirements for the Accepted level correspond to the requirements for "e-BVD2015".

For the Accepted and Recommended levels, classified substances are needed to be reported in the documentation if concentrations exceed limits (weight%) in accordance with *Table 5, Classified substances.* Those substances that are not included in Table 5 must be reported when concentrations of ≥2% occur.

Material and substance contains can be provided in intervals. Examples of accepted intervals are: ≤1%, 1-2.5%, 2.5-10%, 10-25%, 25-50%, 50-75%, 75-100%. In occasion of large intervals, state the reason for the variance and describe what materials/substances increase or decrease in proportion if the product, for example, comes in different sizes.

If classification is applied that is not covered by harmonized classification, this information requires to be reported in the comments column for that substance.

Table 5, Classified substances

Hazard class	**Reporting limit**	
	Accepted	**Recommended**
Carcinogenic categories 1A and 1B (H350)	≥ 0.1%	≥ 0.01%
Carcinogenic category 2 (H351)	≥ 1%	≥ 0.1%
Mutagenic categories 1A and 1B (H340)	≥ 0.1%	≥ 0.01%
Mutagenic category 2 (H341)	≥ 1%	≥ 0.1%
Reproductive toxicity, categories 1A and 1B (H360)	≥ 0.3%	≥ 0.03%
Reproductive toxicity, category 2 (H361)	≥ 2%	≥ 0.3%
Reproductive toxicity effects on or through breastfeeding (H362)	≥ 0.3%	≥ 0.03%
Endocrine disruptors [1, 2]	≥ 0.1%	≥ 0.01%
PBT and/or vPvB [3]	≥ 0.1%	≥ 0.01%
Skin sensitizers (H317)	≥ 1%	≥ 0.1%
Respiratory sensitizers (H334)	≥ 0.2%	≥ 0.02%
Hazardous to aquatic environments, chronic category 1 (H410)	≥ 2%	≥ 0.25%
Ozone depleting substances (EUH 059 and H420)	≥ 0.1%	≥ 0.01%
Acute toxicity category 1 (H300, H310, H330, H301, H311 and/or H331)	≥ 0.1%	≥ 0.01%
Acute toxicity category 2 (H300, H310, H330, H301, H311 and/or H331)	≥ 1%	≥ 0.1%
Acute toxicity category 3 (H300, H310, H330, H301, H311 and/or H331)	≥ 2%	≥ 1%
Pure or compounds of cadmium (Cd)	≥ 0.01%	≥ 0.001%
Pure or compounds of lead (Pb)	≥ 0.1%	≥ 0.01%
Pure or compounds of mercury (Hg)	Contamination ≥ 2.5 mg/kg (ppm) of active additives must always be reported.	
[1]Endocrine disruptors (EDS list)	≥ 0.1%	≥ 0.01%
[2]Endocrine disruptors (SIN list)		≥ 0.01%
[3]PBT, vPvB (SIN list)	≥ 0.1%	≥ 0.01%
Candidate List	≥0.1%*	≥ 0.01%
Other classifications or unclassified substances and material	≥ 2%	≥ 2%

*Substances on the Candidate List have to be reported at component level.

Descriptions of material

Substances should be reported with their CAS- or EC number. Exemptions for certain material can be performed in accordance with the following instructions.

Metals should always be reported together with their alloy number. Alternatively, substances comprising more than 0.01% of the alloy has to be specified in the documentation.

Plastics and rubber materials should be reported together with their name so that it is clearly which monomers that are included, for example, acrylonitrile butadiene styrene (ABS), polyethylene (PE), etc. Additives that have not formed polymers should always be reported in accordance with Table 5 (for example pigments, plasticizers, stabilizers, etc.). BVB always requires that compounds used as plasticizers is declared for PVC plastics (≥ 2%).

Plastics/polymers with descriptions in line with the following list are accepted without specification of monomers.

- Polycarbonate (pertains to bisphenol A based polycarbonates)
- Polyester (monomers must be specified for halogenated polyesters)
- Polyurethane (monomers must be specified for halogenated polyurethanes)
- Fiberglass reinforced epoxy resin laminates FR4 (pertains to tetrabromobisphenol A based polymers)

Other materials with the following descriptions are accepted without clarification or detailed description of their components as the materials normally consist of:

- Glass
- Concrete

Examples of designations of plastics/polymers and other material descriptions that require further clarification are:

- Dispersion polymerization
- Copolymer
- Thermoplastic elastomers (TPE)
- Thermoplastics
- MS polymers
- Mineral fillers

References can be given for composite products to other products (subcomponents) that have been assessed in BVB's system and which have been provided with a BVB ID.

Complex products can be referred to another product (subcomponent), which are estimated in BVB´s systems and provided with BVB ID.

Datablad
Ventilhus RA 2000
Ventil RA-N/RA-U med förinställning

V2-10D

Användning

027

Certifierade enligt
EN 215

RA-N

RA-N vinkel

RA-N, UK

RA-U

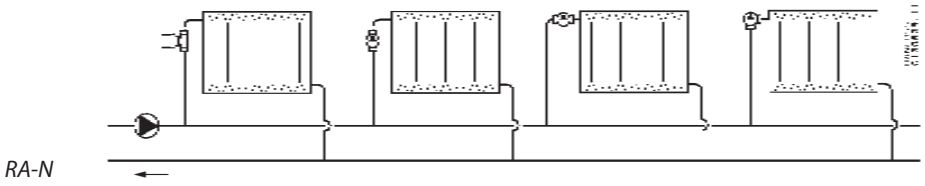
Inbyggnadsmått enligt Euronormen HD 1215-2 serie S. Tekniska data för RA 2000 uppfyller kraven i EN 215-1.

Om det är nödvändigt att tillsätta kemikalier i det cirkulerande vattnet för att minska kalkavsättning och korrosion är det viktigt att leverantörens anvisningar följs.

- Ventil RA-N/RA-U är anpassad för 2-rörssystem med pumpcirkulation.
- Ventil RA-N/RA-U har inbyggd förinställning.

Ventilerna ska inte monteras i reglersystem för tappvarmvatten.

Princip



RA-N

Montering av termostatventiler

1. **Byte av ventilhus**
   Andra åtgärder som ska göras i värmesystemet
   Montera filter
   Vid behov spola rent värmesystemet
2. **Fyll på vatten**
3. **Stäng pumpen**
4. **Lufta systemet**
5. **Koka av systemet**
6. **Lufta systemet**
7. **Ställ in strypvärdet på ventilerna**
8. **Montera termostaten**

Är värmeanläggningen uppdelad på flera stammar, eller kan strömningsljud förekomma på grund av för höga differenstryck, rekommenderas Danfoss differenstrycksregulatorer.
Max differenstryck för undvikande av strömningsljud 30 kPa = 0,3 bar för RA-N.

Beställningsnummer och data

RA-N ventiler

Typ	Ansl.	Utförande	K_V-område [4]								K_{VS}	**Best nr**	RSK nr
			1	2	3	4	5	6	7	N			
RA-N 10 [1]	10	Vinkel	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G0071**	481 82 33
RA-N 10 [1]	10	Rak	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G0072**	481 82 09
RA-N 10 UK [1]	10	Omv vinkel	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G3011**	481 82 66
RA-N 15 [1]	15	Vinkel	0,04	0,08	0,12	0,20	0,30	0,40	0,51	0,73	0,90	**013G0073**	481 82 41
RA-N 15 [1]	15	Rak	0,04	0,08	0,12	0,20	0,30	0,40	0,51	0,73	0,90	**013G0074**	481 82 17
RA-N 15 UK [1]	15	Omv vinkel	0,04	0,08	0,12	0,20	0,30	0,40	0,51	0,73	0,90	**013G3013**	481 82 74
RA-N 20 [2]	20	Vinkel	0,10	0,17	0,19	0,30	0,42	0,62	0,80	1,17	1,58	**013G0075**	481 82 58
RA-N 20 [2]	20	Rak	0,10	0,17	0,19	0,30	0,42	0,62	0,80	1,17	1,58	**013G0076**	481 82 25
RA-N 20 UK [2]	20	Omv vinkel	0,08	0,16	0,24	0,36	0,52	0,69	0,82	0,85	1,03	**013G3015**	481 82 82
RA-N 25 [3]	25	Vinkel	0,10	0,15	0,17	0,26	0,35	0,46	0,73	1,04	1,40	**013G0037**	481 83 99
RA-N 25 [3]	25	Rak	0,10	0,15	0,17	0,26	0,35	0,46	0,73	1,04	1,40	**013G0038**	481 83 81
RA-N 10 [1]	10	Vinkel m låsning	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G4021**	481 82 06
RA-N 10 [1]	10	Rak m låsning	0,04	0,08	0,12	0,19	0,25	0,33	0,38	0,56	0,65	**013G4022**	481 82 07

RA-U ventil

Typ	Anslutning	Utförande	K_V-område [4]												K_{VS}	**Best nr**	RSK nr
			1	2	3	4	5	6	7	8	9	10	11	N			
RA-U	10	Rak	0,016	0,025	0,035	0,05	0,06	0,08	0,10	0,12	0,16	0,21	0,26	0,30	0,32	**013G3022**	481 82 08

[1] Exkl kopplingsdetaljer. Kan förses med kompressionskopplingar på tillopp. Se tillbehör.
[2] Exkl kopplingsdetaljer.
[3] Utförande enligt HD 1215-2 Serie D inkl kopplingsdetaljer.
[4] K_v-värdena anger genomströmningsmängden (Q) i m^3/h vid en given lyfthöjd och ett tryckfall (Δp) över ventilen på 1 bar (100 kPa). Vid inställning N anges k_v-värdet enligt EN 215-1 vid Xp = 2°C (P-band). Vid lägre inställningsvärden minskar Xp ned till 0,5 °C vid inställning 1. Vid inställningar mellan 1 och N ligger Xp således mellan 0,5°C och 2°C. Xp = 2°C betyder att ventilen är stängd vid en temperatur 2°C över inställt värde. K_{vs}-värdet anger flödet vid full lyfthöjd, d.v.s. fullt öppen ventil.

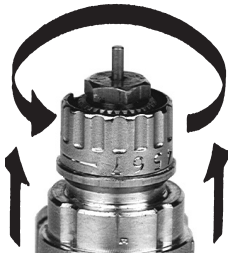
Tillbehör

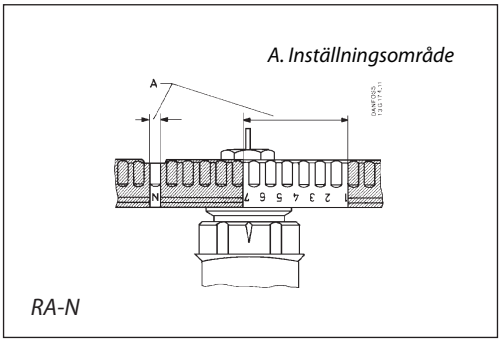
Nipplar, muttrar och kompressionskopplingar till RA-N/RA-U ventiler

Benämning	Avsedd för	Anslutning	**Best nr**	RSK nr	
Rak nippel	RA-N 10	10 (3/8″)	**013L0962**		Mutter: **013L0967**
Rak nippel	RA-N 15	15 (1/2″)	**013L0964**		Mutter: **013L0969**
Rak nippel	RA-N 20	20 (3/4″)	**013L0930**		Mutter: **013L0939**
Kompressionskoppling	RA-N 10	3/8″ x Ø10	**013G4100** [1]		
Kompressionskoppling	RA-N 10	3/8″ x Ø12	**013G4102** [1]	480 38 89	
Kompressionskoppling	RA-N 15	1/2″ x Ø12	**013L0288** [1]	481 88 45	
Kompressionskoppling	RA-N 15	1/2″ x Ø15	**013L0289** [1]	481 88 52	
Inställningsnyckel	RA-U		**013G3030**	481 82 05	

[1] Levereras i sats om 10 st.

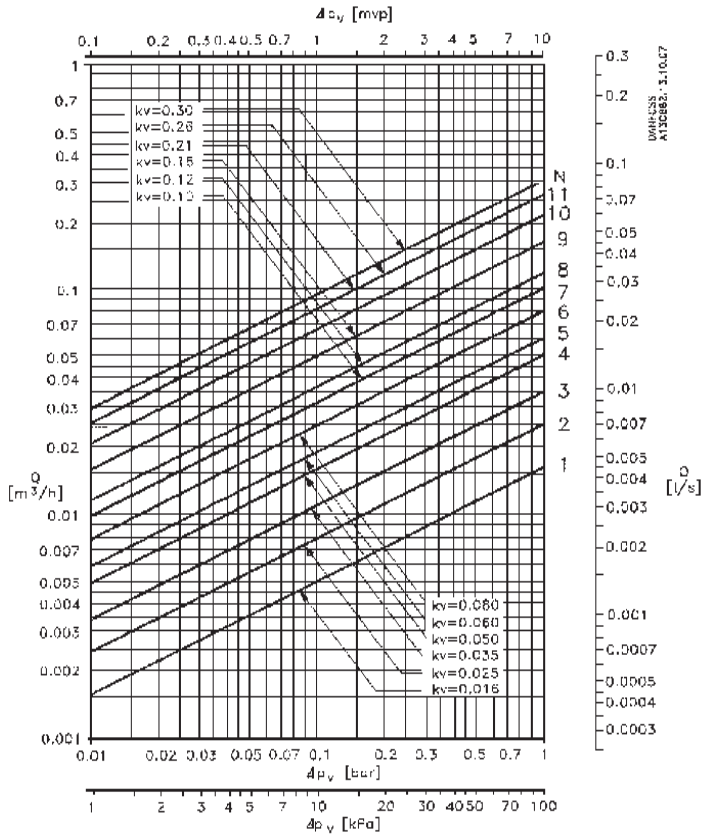
Inställning av variabel ventilkapacitet



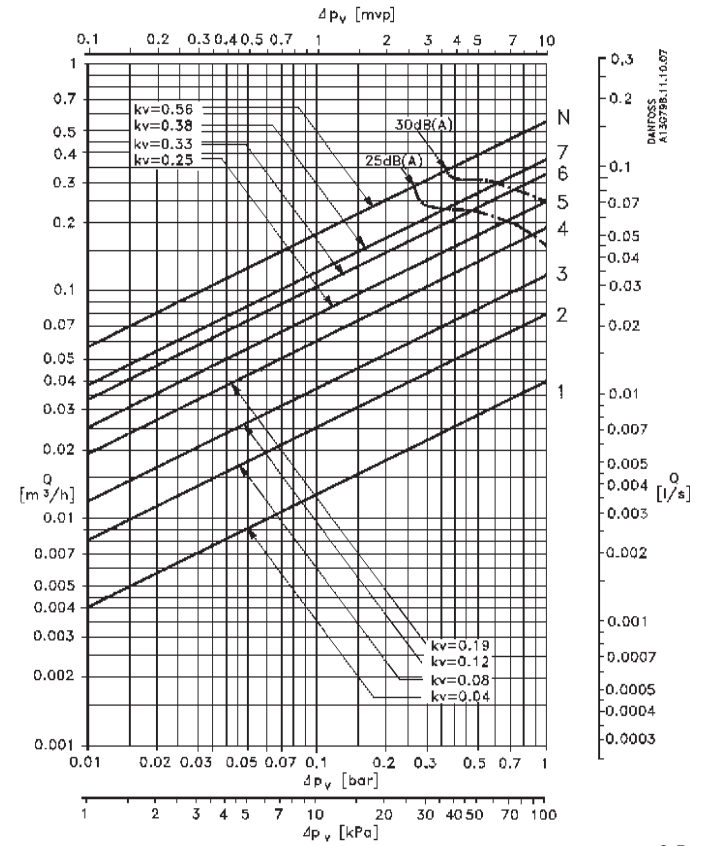


RA-N/RA-U ventilen ger möjlighet till justering av kapaciteten.

- Ventilens kapacitet justeras genom att lyfta skalringen och vrida den till önskad inställ-ning.
- RA-N: Förinställningsvärdena kan väljas i halva steg mellan MIN - 7 (RA-U: MIN - 11).
  MIN är två hack under inställningstal 1. Vid inställningen N är ventilen helt öppen.
  Området som blir utanför inställningen bör inte användas. Streckat område.
- I kapacitetsdiagrammen framgår ventilernas kapacitet.

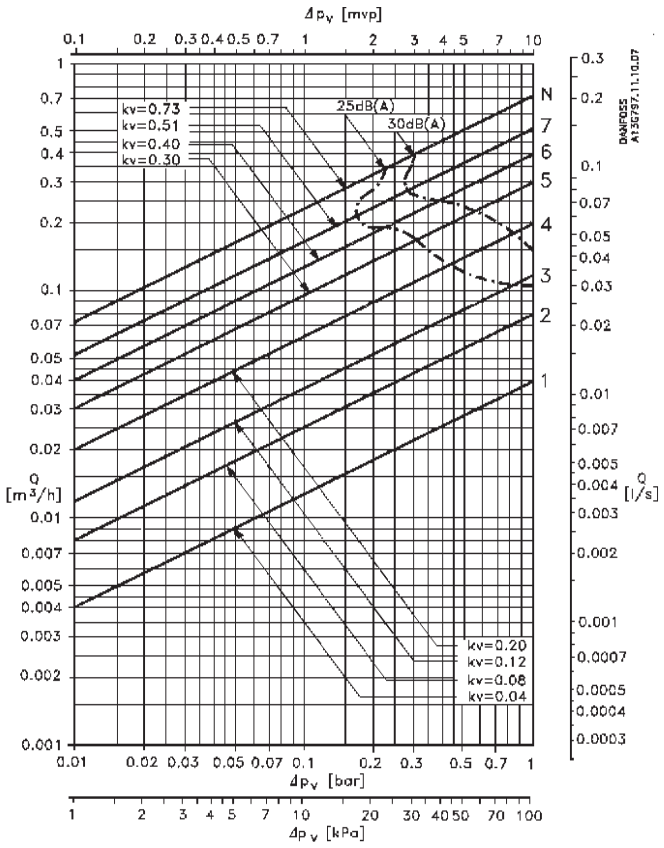


RA-U

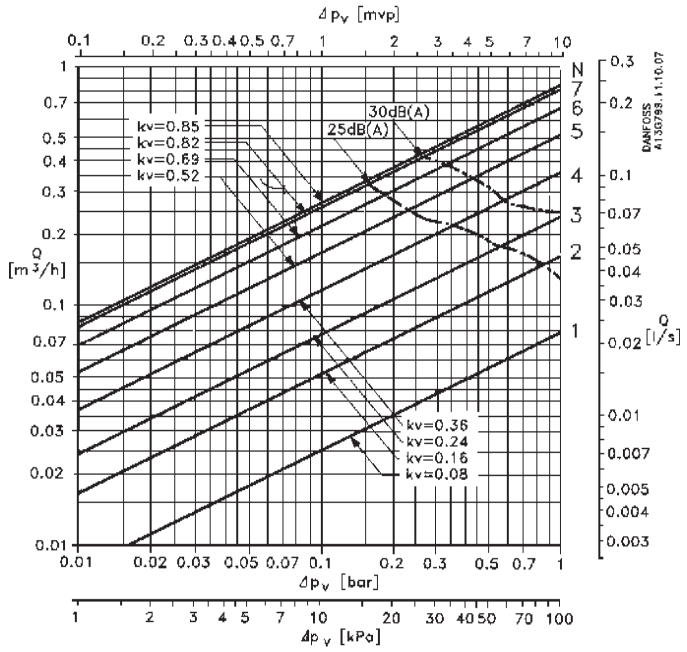


RA-N 10

0,5 < Xp < 2°C

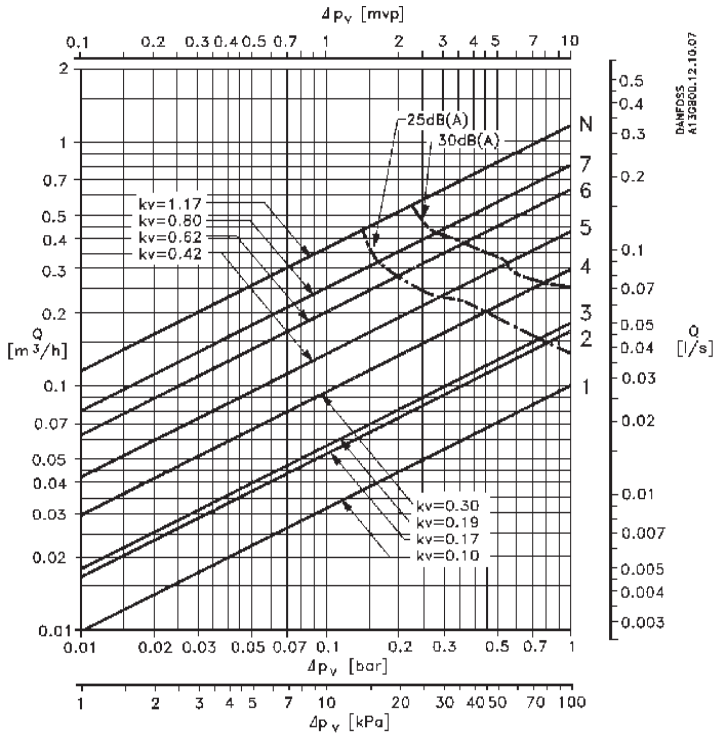


RA-N 15

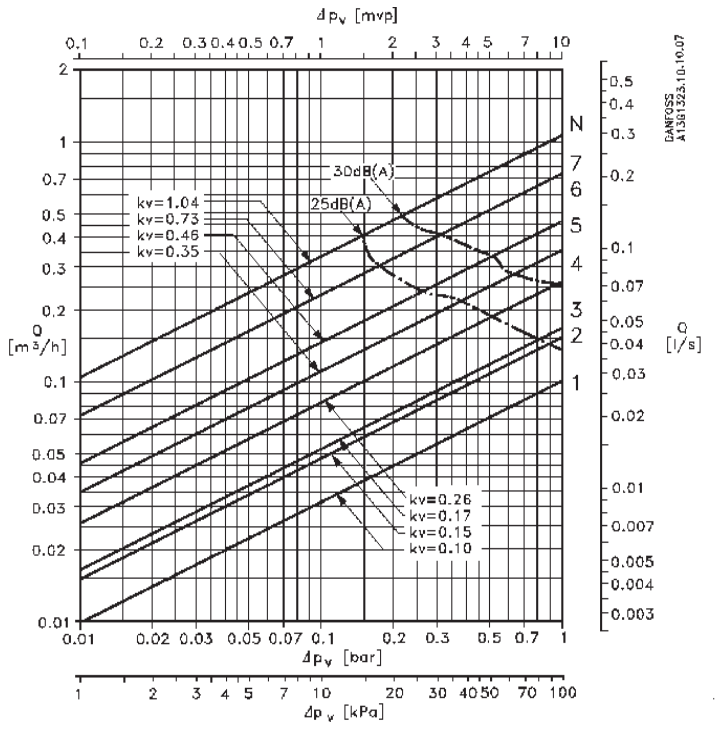


RA-N 20 UK

0,5 < Xp < 2°C



RA-N 20



RA-N 25

0,5 < Xp < 2°C

Dimensioneringsexempel för RA-N

Q = 0,025 m^3/h
(vattenmängd genom radiatorn).

Δp_V = 10 kPa
(erforderligt tryckfall över ventilen).

Gå in i k_V-diagrammet, t ex RA-N 10 sid 3, vid 0,025 m^3/h. Drag en vågrät linje över hela diagrammet. Drag sedan en lodrät linje för tryckfallet 10 kPa så att den korsar den vågräta linjen. Avläs k_V-värdet på de sneda linjerna. Linjerna korsar varandra på linjen för k_V-värde 0,08. Gå sedan in i k_V-tabellen och sök k_V-värdet 0,08.

RA-N 10 får inställningsvärde 2
RA-N 15 får inställningsvärde 2

Vid mindre inställningsvärde än valt k_V-värde minskas P-bandet.

Vid tryckfallsberäkning kan lämpligt dimen-sioneringsområde vara mellan 3 och 20 kPa.

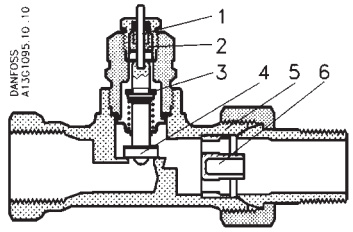
Mätvillkor för ljudkurvor

Provrum:	ISO 3743 (L: 5,3 x B: 4,9 x H: 2,6 m)
Efterklangstid:	1 sekund
Bakgrundsljud:	L_p 13 - 15 dB(A)
Radiator:	DIN 4722, Typ 500/160, H x B: 550 x 1500 mm
Mikrofonavstånd:	1,2 m från ventil
Ljudnivå:	Ljudtrycksnivå L_p dB(A)

Typ	RA-N 10	RA-N 15	RA-N 20	RA-N 20 UK
Inställningsvärden	k_V-värde: m^3/h vid Δp = 1 bar			
Min	0,01	0,01		
0,5	0,03	0,03		
1,0	0,04	0,04	0,10	0,08
1,5	0,06	0,06	0,14	0,12
2,0	0,08	0,08	0,17	0,16
2,5	0,10	0,10	0,18	0,20
3,0	0,12	0,12	0,19	0,24
3,5	0,16	0,16	0,25	0,30
4,0	0,19	0,20	0,30	0,36
4,5	0,22	0,25	0,36	0,44
5,0	0,25	0,30	0,42	0,52
5,5	0,29	0,35	0,52	0,61
6,0	0,33	0,40	0,62	0,69
6,5	0,36	0,46	0,71	0,76
7,0	0,38	0,51	0,80	0,82
N	0,56	0,73	1,17	0,85
k_{VS}	0,65	0,90	1,58	1,03

0,5 °C ≤ X_P ≤ 2,0 °C

Konstruktion



1. Tryckstift
2. O-ringspackbox
3. Inställningsslöja
4. Ventilkägla
5. Ventilhus
6. Dysa

RA-N

Radiatortermostaten består av termostat RA 2000 och ventil RA. Delarna beställs var för sig. Ventilens packbox kan bytas under drift.

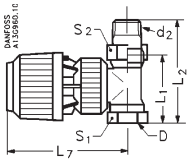
Material i vattenberörda delar

Ventil och övriga metalldelar	Ms 58
Begränsningshylsa	PPS
O-ring	EPDM
Ventilkägla	NBR
Tryckstift och ventilfjäder	Kromstål
Ljuddämparinsats (ej RA-G)	PP
Ventilhus	Utvändigt förnicklat

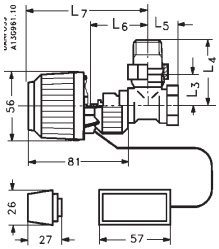
Max omgivningstemp., termostat	60 °C
Max mediatemperatur	120 °C
Max arbetstryck	1000 kPa
Max differenstryck: RA-N/RA-U	60 kPa*)
Max diff.tryck för ljud: RA-N	30 kPa
Max diff.tryck för ljud: RA-U	20 kPa
Rekommenderat tryckfall	10 kPa
Provtryck	1600 kPa
Eurogodkännande	EN-215

*) Max differenstryck anger det maximala tryck vid vilket ventilerna ger en tillfredsställande reglering. Dessa gränser tar ej hänsyn till ev. oljud. Erfarenheten visar att i de flesta anläggningar är ett diff.tryck på 10-30 kPa tillräckligt.

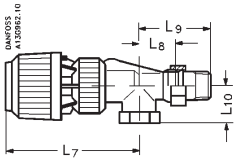
Mått



RA-N/RA-U



RA-N vinkel



RA-N (UK)

Typ	Anslutning				L_1	L_2	L_3	L_4	L_5	L_6	L_8	L_{10}	S_1	S_2
	DN	D	d_1	d_2										
RA-N 10	10	R_p 3/8″	M22 x 1,5	-	50	-	23	-	20	45	-	-	23	-
RA-N 10 UK	10	R_p 3/8″	M22 x 1,5	-	-	-	-	-	-	59	26	22	22	-
RA-N 15	15	R_p 1/2″	M26 x 1,5	-	58	-	26	-	24	45	-	-	27	-
RA-N 15 UK	15	R_p 1/2″	M26 x 1,5	-	-	-	-	-	-	60	29	26	27	-
RA-N 20	20	R_p 3/4″	M34 x 1,5	-	68	-	31	-	28	50	-	-	34	-
RA-N 20 UK	20	R_p 3/4″	M34 x 1,5	-	-	-	-	-	-	61	34	29	32	-
RA-N 25	25	R_p 1″		R 1″	90	-	40	-	34	47	-	-	41	-

Danfoss AB
SE-595 82 Mjölby
Industrigatan 7
Tfn 0142-885 00
Fax 0142-885 09
www.danfoss.se

SE-200 39 Malmö
Stenåldersgatan 2
Box 9153
Tfn 040-671 25 50
Fax 040-21 49 75

SE-100 73 Stockholm
Sjöviksbacken 24
Box 44049
Tfn 08-775 42 00
Fax 08-775 42 42

SE-906 20 Umeå
Kylgränd 6

Tfn 090-71 69 90
Fax 090-18 70 30

SE-431 53 Mölndal
Johannefredsgatan 4

Tfn 031-86 84 60
Fax 031-86 84 69