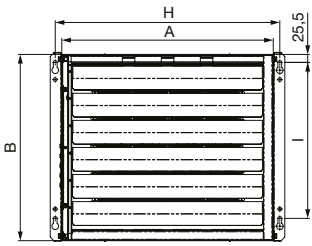
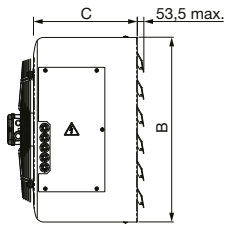
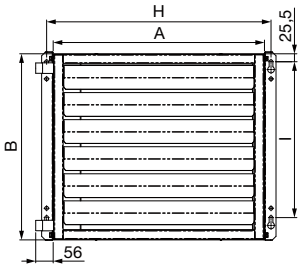
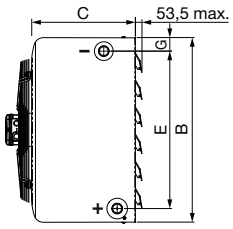
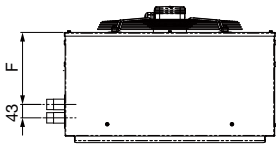




SONORA-E







SONORA-W

Technical parameters

Type	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]
SONORA-E	530	470	335	–	–	–	570	380
SONORA-E1	680	600	335	–	–	–	720	500
SONORA-W	530	470	335	375	230	45	570	380
SONORA-W1	680	600	335	505	230	45	720	500
SONORA-W2	875	750	370	655	300	45	915	650

5

Cabinet
it is made of galvanized sheet steel, painted in the color RAL 9010 or natural zinc.
A cover grid is fitted to the fan intake. The outlet has a blind with manually adjustable aluminum slats.

Fan
it is maintenance-free, high-performance, statically and dynamically balanced with a built-in thermal contact against overheating. Fan voltage 230 V or 400 V. The fans are equipped with a diffuser to reduce noise.

Heater
Powerful 2, 3, and 4-row Cu/Al exchangers for max. 90°/1.6 MPa. The spacing of the slats allows trouble-free cleaning. Electronically adjustable exchangers with heating elements with built-in protection against overheating, including emergency electronics with the possibility of connecting a room or exhaust thermostat.

Regulation
Units with el. heaters are always supplied with the DR-CP4 controller. Heaters cannot be chained. Units with water heater and 230 V fan are controlled by SR-CP-230V controller. Units can be chained. Units with water heater and 400 V fan are controlled by the SR-CP-400V controller. Units can be chained. The size of the controller is dimensioned depending on the current load of the connected units.

Staples
Units with el. the heater has a connection terminal board inside. Cables are routed through grommets on the side of the cabinet. Water heater units have fan power connected directly to the fan terminal block.

Noise
The sound pressure level shown in the table is determined for a distance of 5 m from the unit in a space with average reflective properties.

Mounting
on the wall using a universal adjustable hinge. Units with a water heater can also be installed under the ceiling.

Accessories
- **SR-CP-230V** controller for water curtains
- **SR-CP-400V** controller for water curtains
- **SR-CW** wall hangings
- **SR-CS** suspended ceilings
- **DR-C5** connecting cable unit/controller
- **DR-TR** room thermostat
- **AV 6** two-way valve
- **Tri-CTR** three-way valve
- **Aktor T 2P** electrothermal valve drive
- **TR-K2 2050** thermostatic head

Information
Circulation unit intended for warm air heating of rooms.

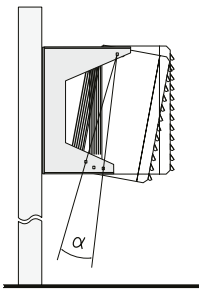
Additional illustrations

Type key

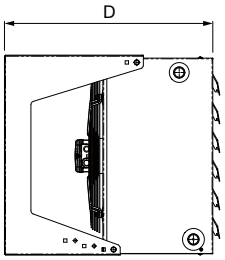
SONORA-E-14-400V-4 RAL 9010

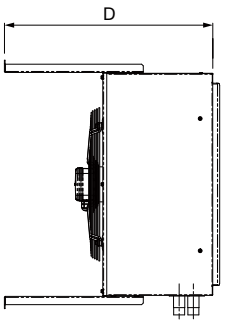
1 2 3 4 5 6

1 – fan type
2 – heater type
W – water with low power
W1 – water with medium power
W2 – water with increased performance
E – electric
E1 – electric with increased power
3 – performance (kW)
4 – unit power supply (V)
5 – method of regulation
4 – integrated regulation with DR-CP4 controller (part of delivery for SONORA-E)
no label – no driver
6 – color
standard RAL 9010
without marking – galvanized
(other colors on request)



adjustable wall hangings





curtains

Type	D [mm]
SONORA-E	630
SONORA-E1	630
SONORA-W	630
SONORA-W1	630
SONORA-W2	750

SR-CW

SR-CS

wall and ceiling mounting – directional slats for efficient use of power units by location and location

5

Characteristics

Technical data – SONORA® with electric heat exchanger (heater type E)

Type		E-4-400V-4	E-6-400V-4	E-7-400V-4	E-9-400V-4
acoustic performance	dB(A)	54	54	54	54
air flow	m³/h	2225	2225	2225	2225
weight	kg	19	19	19	19
cover	–	IP20	IP20	IP20	IP20
fan					
input power	W	165	165	165	165
current	A	0.9	0.9	0.9	0.9
voltage	V	230	230	230	230
electric heater					
heating power of the heater	kW	4.5	6.0	7.5	9.0
voltage	V	400	400	400	400
number of heater sections	–	2	2	2	2
power sharing	kW	1.5/4.5	3/6	3/7.5	3/9
output temperature*	°C	16	18	20	22

* inlet air temperature 10 °C

Technical data – SONORA® with electric heat exchanger (heater type E1)

Type		E1-10-400V-4	E1-12-400V-4	E1-15-400V-4	E1-17-400V-4	E1-20-400V-4
acoustic performance	dB(A)	58	58	58	58	58
air flow	m^3/h	3650	3650	3650	3650	3650
weight	kg	26	26	26	26	28
cover	–	IP20	IP20	IP20	IP20	IP20
fan						
input power	W	260	260	260	260	260
current	A	1.4	1.4	1.4	1.4	1.4
voltage	V	230	230	230	230	230
electric heater						
heating power of the heater	kW	10.0	12.5	15.0	17.5	20.0
voltage	V	400	400	400	400	400
number of heater sections	–	2	2	2	2	2
power sharing	kW	5/10	5/12.5	7.5/15	7.5/17.5	7.5/20
output temperature*	°C	18	20	22	24	26

* inlet air temperature 10 °C

Technical data – SONORA® with water exchanger (heater type W)

Type		W-14-230V	W-17-230V	W-20-230V	W-14-400V	W-17-400V	W-20-400V
acoustic performance	dB(A)	54	54	53	54	54	53
air flow	m^3/h	2225	1900	1725	2225	1900	1725
weight	kg	18	19	20	18	19	20
cover	–	IP54	IP54	IP54	IP54	IP54	IP54
fan							
input power	W	165	165	165	190/140	190/140	190/140
current	A	0.9	0.9	0.9	0.5/0.3***	0.5/0.3***	0.5/0.3***
voltage	V	230	230	230	400	400	400
water heater							
heating power of the heater 80/60 °C*	kW	14.3	17.7	20.7	14.3	17.7	20.7
heating power of the heater 60/40 °C**	kW	12.3	15.2	18.1	12.3	15.2	18.1
heating power of the heater 50/35 °C**	kW	7.7	9.6	11.5	7.7	9.6	11.5
number of exchanger rows	–	2	3	4	2	3	4
max. medium temperature	°C	90	90	90	90	90	90
max. operating pressure	MPa	1.6	1.6	1.6	1.6	1.6	1.6
heater connection	“	3/4	3/4	3/4	3/4	3/4	3/4

* parameters of water heaters are calculated for the indicated temperature gradients, inlet air temperature +15 °C and maximum air output

** parameters of water heaters are calculated for the indicated temperature gradients, inlet air temperature +10 °C and maximum air output

*** engagement Δ/Y

Technical data – SONORA® with water exchanger (heater type W1)

Type		W1-25-230V	W1-32-230V	W1-37-230V	W1-25-400V	W1-32-400V	W1-38-400V
acoustic performance	dB(A)	58	58	57	58	58	57
air flow	m^3/h	3650	3275	2975	3650	3350	3100
weight	kg	24	26	28	24	26	28
cover	–	IP54	IP54	IP54	IP54	IP54	IP54
fan							
input power	W	260	260	260	260/180	260/180	260/180
current	A	1.4	1.4	1.4	0.6/0.4***	0.6/0.4***	0.6/0.4***
voltage	V	230	230	230	400	400	400
water heater							
heating power of the heater 80/60 °C*	kW	25.5	32.4	37.5	25.5	32.8	38.6
heating power of the heater 60/40 °C**	kW	22.1	28.1	32.9	22.1	28.5	33.8
heating power of the heater 50/35 °C**	kW	14.0	17.8	21.0	14.0	18.0	21.6
number of exchanger rows	–	2	3	4	2	3	4
max. medium temperature	°C	90	90	90	90	90	90
max. operating pressure	MPa	1.6	1.6	1.6	1.6	1.6	1.6
heater connection	“	1	1	1	1	1	1

* parameters of water heaters are calculated for the indicated temperature gradients, inlet air temperature +15 °C and maximum air output

** parameters of water heaters are calculated for the indicated temperature gradients, inlet air temperature +10 °C and maximum air output

*** engagement Δ/Y

Technical data – SONORA® with water exchanger (heater type W2)

Type		W2-41-230V	W2-53-230V	W2-64-230V	W2-40-400V	W2-55-400V	W2-61-400V
acoustic performance	dB(A)	59	59	59	59	59	59
air flow	m^3/h	5275	5125	4825	5200	5125	4550
weight	kg	39	43	47	39	43	47
cover	–	IP54	IP54	IP54	IP54	IP54	IP54
fan							
input power	W	480	480	480	450/340	450/340	450/340
current	A	2.1	2.1	2.1	1.0/0.7***	1.0/0.7***	1.0/0.7***
voltage	V	230	230	230	400	400	400
water heater							
heating power of the heater 80/60 °C*	kW	41.2	53.9	64.5	40.9	55.1	61.9
heating power of the heater 60/40 °C**	kW	35.9	47.3	56.9	35.6	48.3	54.7
heating power of the heater 50/35 °C**	kW	22.8	30.2	36.6	22.6	30.8	35.2
number of exchanger rows	–	2	3	4	2	3	4
max. medium temperature	°C	90	90	90	90	90	90
max. operating pressure	MPa	1.6	1.6	1.6	1.6	1.6	1.6
heater connection	“	5/4	5/4	5/4	5/4	5/4	5/4

* parameters of water heaters are calculated for the indicated temperature gradients, inlet air temperature +15 °C and maximum air output

** parameters of water heaters are calculated for the indicated temperature gradients, inlet air temperature +10 °C and maximum air output

*** engagement Δ/Y

Parameters of water heaters (heater type W)

water temperature drop	inlet air temperature -10 °C			inlet air temperature 0 °C			inlet air temperature +10 °C		
	heat output [kW]	output temperature air [°C]	flow heating water [l/h]	heat output [kW]	output temperature air [°C]	flow heating water [l/h]	heat output [kW]	output temperature air [°C]	flow heating water [l/h]
					SONORA-W-14-230V				
80/60 °C	21.0	17.8	900	18.2	24.1	756	14.0	33.6	576
60/40 °C	15.1	10.0	648	12.3	16.3	504	8.1	25.8	324
50/35 °C	13.3	7.7	756	10.5	14.0	576	6.4	23.4	360
					SONORA-W-17-230V				
80/60 °C	25.9	30.2	1080	22.6	34.9	936	17.3	41.9	720
60/40 °C	18.7	19.0	792	15.2	23.7	648	10.1	30.6	432
50/35 °C	16.4	15.5	936	13.0	20.2	720	7.9	27.2	432
					SONORA-W-20-230V				
80/60 °C	30.0	41.2	1260	26.1	44.6	1116	20.3	49.7	864
60/40 °C	21.9	27.5	936	18.1	30.9	756	12.2	35.9	504
50/35 °C	19.2	22.9	1080	15.4	26.3	864	9.6	31.3	540
					SONORA-W-14-400V				
80/60 °C	21.0	17.8	900	18.2	24.1	756	14.0	33.6	576
60/40 °C	15.1	10.0	648	12.3	16.3	504	8.1	25.8	324
50/35 °C	13.3	7.7	756	10.5	14.0	576	6.4	23.4	360
					SONORA-W-17-400V				
80/60 °C	25.9	30.2	1080	22.6	34.9	936	17.3	41.9	720
60/40 °C	18.7	19.0	792	15.2	23.7	648	10.1	30.6	432
50/35 °C	18.7	19.0	792	15.2	23.7	648	10.1	30.6	432
					SONORA-W-20-400V				
80/60 °C	30.0	41.2	1260	26.1	44.6	1116	20.3	49.7	864
60/40 °C	21.9	27.5	936	18.1	30.9	756	12.2	35.9	504
50/35 °C	19.2	22.9	1080	15.4	26.3	864	9.6	31.3	540

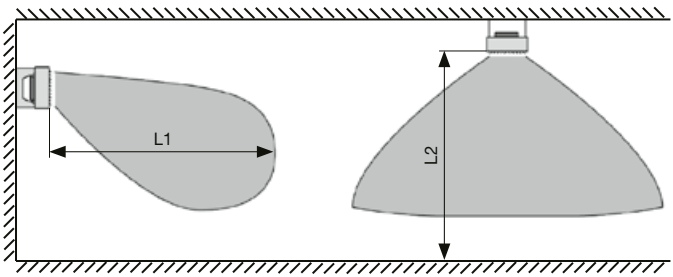
Parameters of water heaters (heater type W1)

water temperature drop	inlet air temperature -10 °C			inlet air temperature 0 °C			inlet air temperature +10 °C		
	heat output [kW]	output temperature air [°C]	flow heating water [l/h]	heat output [kW]	output temperature air [°C]	flow heating water [l/h]	heat output [kW]	output temperature air [°C]	flow heating water [l/h]
					SONORA-W1-25-230V				
80/60 °C	37.3	20.2	1608	32.4	26.2	1397	25.5	34.6	1099
60/40 °C	27.0	11.9	1164	22.1	17.9	953	15.5	26.3	668
50/35 °C	23.8	9.2	1368	18.9	15.3	1086	12.0	23.7	690
					SONORA-W1-32-230V				
80/60 °C	47.2	32.5	2034	41.0	36.9	1767	32.4	43.1	1397
60/40 °C	34.3	20.9	1478	28.1	25.3	1211	19.4	31.5	836
50/35 °C	30.1	17.1	1730	24.0	21.6	1379	15.3	27.8	879
					SONORA-W1-37-230V				
80/60 °C	54.1	43.6	2332	47.2	46.8	2034	37.5	51.2	1616
60/40 °C	39.8	29.5	1716	32.9	32.6	1418	23.1	36.9	996
50/35 °C	34.8	24.5	2000	28.0	27.7	1609	18.2	32.1	1046
					SONORA-W1-25-400V				
80/60 °C	37.3	20.2	1584	32.4	26.2	1368	25.1	35.2	1044
60/40 °C	27.1	11.9	1152	22.1	17.9	936	14.7	26.9	612
50/35 °C	23.8	9.3	1332	18.9	15.6	1080	11.5	24.3	648
					SONORA-W1-32-400V				
80/60 °C	47.8	32.1	2052	41.6	36.6	1764	32.2	43.3	1365
60/40 °C	34.7	20.6	1476	28.5	25.1	1224	19.1	31.8	792
50/35 °C	30.5	16.9	1728	24.3	21.4	1368	14.9	28.1	828
					SONORA-W1-38-400V				
80/60 °C	55.6	42.9	2376	48.5	46.2	2052	37.9	51.0	1620
60/40 °C	40.9	28.9	1728	33.8	32.1	1440	23.0	36.9	972
50/35 °C	35.8	24.1	2052	28.7	27.3	1620	18.0	32.1	1008

Parameters of water heaters (heater type W2)

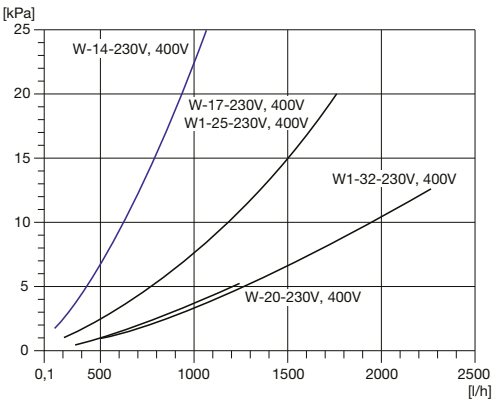
water temperature drop	inlet air temperature -10 °C			inlet air temperature 0 °C			inlet air temperature +10 °C		
	heat output [kW]	output temperature vzduchu [°C]	flow heating water [l/h]	heat output [kW]	output temperature vzduchu [°C]	flow heating water [l/h]	heat output [kW]	output temperature vzduchu [°C]	flow heating water [l/h]
					SONORA-W2-41-230V				
80/60 °C	60.1	23.6	2591	52.2	29.2	2250	41.2	37.1	1776
60/40 °C	43.7	14.5	1884	35.9	20.1	1547	24.9	27.9	1073
50/35 °C	38.4	11.5	2207	30.6	18.1	1759	19.6	21.9	1126
					SONORA-W2-53-230V				
80/60 °C	79.6	35.8	3420	69.4	39.9	2952	54.1	46.1	2304
60/40 °C	58.5	23.7	2484	48.3	27.8	2052	32.8	33.9	1404
50/35 °C	51.3	19.5	2916	41.1	23.6	2340	25.7	29.8	1440
					SONORA-W2-64-230V				
80/60 °C	92.3	46.4	3978	80.7	49.3	3478	64.5	53.4	2780
60/40 °C	68.5	31.9	2953	56.9	34.8	2453	40.4	13.8	1741
50/35 °C	59.9	26.6	3443	48.3	29.5	2776	31.9	33.5	1833
					SONORA-W2-40-400V				
80/60 °C	59.6	23.8	2556	51.8	29.4	2196	40.1	37.8	1692
60/40 °C	43.4	14.6	1836	35.6	20.2	1512	23.9	28.5	1008
50/35 °C	38.1	11.6	2160	30.4	17.2	1728	18.7	25.6	1044
					SONORA-W2-55-400V				
80/60 °C	79.6	35.8	3420	69.4	39.9	2952	54.1	46.1	2304
60/40 °C	58.5	23.7	2484	48.3	27.8	2052	32.8	33.9	1404
50/35 °C	51.3	19.5	2916	41.1	23.6	2340	25.7	29.8	1440
					SONORA-W2-61-400V				
80/60 °C	88.6	47.5	3780	77.5	50.3	3312	60.8	54.4	2592
60/40 °C	65.8	32.7	2808	54.7	35.5	2340	37.8	39.5	1620
50/35 °C	57.5	27.3	3276	46.4	30.1	2628	29.6	34.2	1692

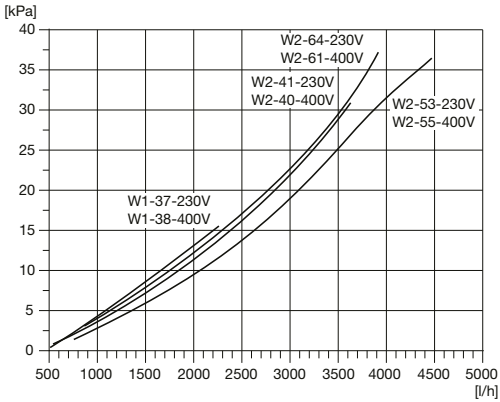
Airflow range:



Type	L1 [m]
SONORA-E-4-400V-4	18.0
SONORA-E-6-400V-4	17.0
SONORA-E-7-400V-4	16.5
SONORA-E-9-400V-4	16.0
SONORA-E1-10-400V-4	22.0
SONORA-E1-12-400V-4	21.0
SONORA-E1-15-400V-4	20.0
SONORA-E1-17-400V-4	19.0
SONORA-E1-20-400V-4	18.0

Type	L1 [m]	L2 [m]
SONORA-W-14-230V, 400V	16.5	8.2
SONORA-W-17-230V, 400V	13.9	6.7
SONORA-W-20-230V, 400V	12.1	6.0
SONORA-W1-25-230V	19.7	9.8
SONORA-W1-32-230V	17.6	9.0
SONORA-W1-37-230V	15.7	8.3
SONORA-W1-25-400V	20.8	10.3
SONORA-W1-32-400V	17.7	9.0
SONORA-W1-38-400V	17.3	8.3
SONORA-W2-41-230V	21.0	10.5
SONORA-W2-53-230V	20.4	10.0
SONORA-W2-64-230V	18.0	8.9
SONORA-W2-40-400V	21.0	10.6
SONORA-W2-55-400V	20.4	10.5
SONORA-W2-61-400V	17.6	8.9





pressure losses of water exchangers

DR-CP4 – wall controller for units with el. heating

Controller intended for controlling one unit without the possibility of chaining, with the possibility of connecting external elements

- the possibility of connecting a room exhaust thermostat
- cover IP20
- dimensions W×H×D 71×71×25 mm
- surface mounting
- cable length max. 100 m

SR-CP-230V, SR-CP-400V – controllers for water heating units

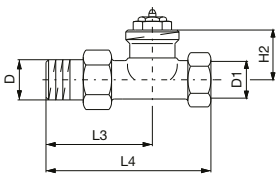
5

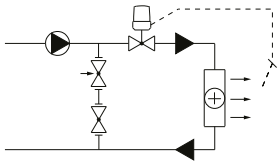
Driver	max. current load [A]
SR-CP2-230V	2
SR-CP3-230V	3
SR-CP5-230V	5
SR-CP7-230V	7
SR-CP10-230V	10

Driver	max. current load [A]
SR-CP4-400V	4
SR-CP8-400V	8
SR-CP10-400V	10
SR-CP15-400V	15

SR-CP controllers are intended for circulation units with water heating. Dimensioning depends on the total current load of the connected units

AV 6, A – two-way valves

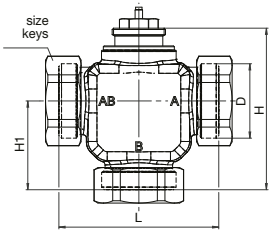


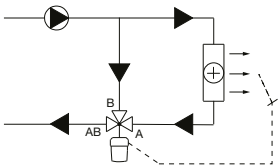


Type	DN	D [“]	D1 [“]	L3 [mm]	L4 [mm]	H2 [mm]
AV 6	20	3/4	3/4	63	106	29.0
AV 6	25	1	1	80	125	30.0
A	32	1 1/4	1 1/4	90	150	33.5

in the case of using a two-way valve, it is necessary to consider the use of a short circuit (bypass) with a balancing valve, which is taken into account when calculating the hydraulics of the entire supply branch of the heating system

Tri-CTR – three way valve



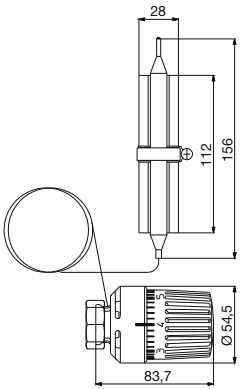


DN	D [“]	L [mm]	H [mm]	H1 [mm]	size keys
20	3/4	80	88	47	37
25	1	90	91	50	46
32	1 1/4	110	96	55	52

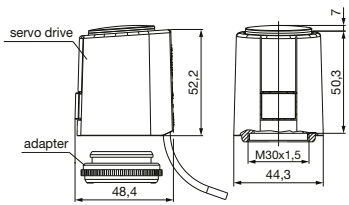
connection of the three-way valve to the reverse

5

TR-K2 2050 – thermostatic head



Aktor T 2P – electrothermal valve drive



Technical parameters

Regulation

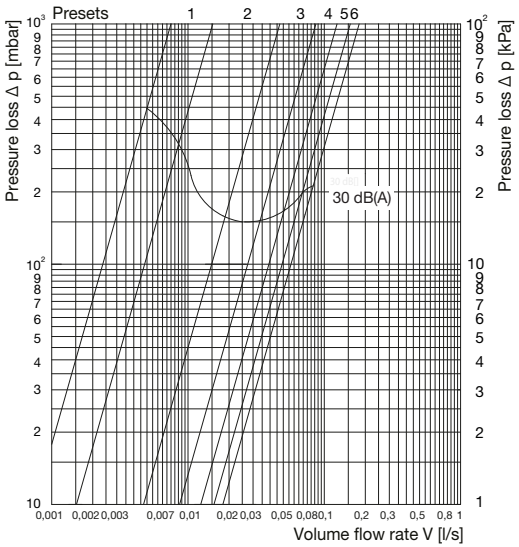
Separately suspended circulation units for hot air heating SONORA with a water heater can be regulated using a two- or three-way valve fitted with a thermostatic head with a capillary 2 m long. The head contains a fuse against exceeding the temperature 30 K above the set value. The range of regulation can be limited or blocked. Threaded connection of the head M 30 x 1.5. The three-way valve is connected to the return line of the heater as shown in the figure. The probe of the temperature sensor is placed in the stream of outgoing air. The two-way valve is connected to the heating water supply according to the diagram. The air temperature can be set in the range of 20 to 50 °C, see table.

Type	water connection	t_{max} [°C]	thermostat. header*	temperature control range [°C]	capillary length [m]	thermostatic valve			
						two-way	k_{vs}**	three way	k_{vs}**
SONORA-W-14-230	DN 20 / 3/4“	120	TR-K2 2050	20–50	2	AV6 DN20	0.9	Tri-CTR DN20	4.4
SONORA-W-17-230	DN 20 / 3/4“	120	TR-K2 2050	20–50	2	AV6 DN20	0.9	Tri-CTR DN20	4.4
SONORA-W-20-230	DN 20 / 3/4“	120	TR-K2 2050	20–50	2	AV6 DN20	0.9	Tri-CTR DN20	4.4
SONORA-W-14-400	DN 20 / 3/4“	120	TR-K2 2050	20–50	2	AV6 DN20	0.9	Tri-CTR DN20	4.4
SONORA-W-17-400	DN 20 / 3/4“	120	TR-K2 2050	20–50	2	AV6 DN20	0.9	Tri-CTR DN20	4.4
SONORA-W-20-400	DN 20 / 3/4“	120	TR-K2 2050	20–50	2	AV6 DN20	0.9	Tri-CTR DN20	4.4
SONORA-W1-25-230	DN 25 / 1“	120	TR-K2 2050	20–50	2	AV6 DN25	0.9	Tri-CTR DN25	5.7
SONORA-W1-32-230	DN 25 / 1“	120	TR-K2 2050	20–50	2	AV6 DN25	0.9	Tri-CTR DN25	5.7
SONORA-W1-37-230	DN 25 / 1“	120	TR-K2 2050	20–50	2	AV6 DN25	0.9	Tri-CTR DN25	5.7
SONORA-W1-25-400	DN 25 / 1“	120	TR-K2 2050	20–50	2	AV6 DN25	0.9	Tri-CTR DN25	5.7
SONORA-W1-32-400	DN 25 / 1“	120	TR-K2 2050	20–50	2	AV6 DN25	0.9	Tri-CTR DN25	5.7
SONORA-W1-38-400	DN 25 / 1“	120	TR-K2 2050	20–50	2	AV6 DN25	0.9	Tri-CTR DN25	5.7
SONORA-W2-41-230	DN 32 / 5/4“	120	TR-K2 2050	20–50	2	A DN32	4.1	Tri-CTR DN32	7.2
SONORA-W2-53-230	DN 32 / 5/4“	120	TR-K2 2050	20–50	2	A DN32	4.1	Tri-CTR DN32	7.2
SONORA-W2-64-230	DN 32 / 5/4“	120	TR-K2 2050	20–50	2	A DN32	4.1	Tri-CTR DN32	7.2
SONORA-W2-40-400	DN 32 / 5/4“	120	TR-K2 2050	20–50	2	A DN32	4.1	Tri-CTR DN32	7.2
SONORA-W2-55-400	DN 32 / 5/4“	120	TR-K2 2050	20–50	2	A DN32	4.1	Tri-CTR DN32	7.2
SONORA-W2-61-400	DN 32 / 5/4“	120	TR-K2 2050	20–50	2	A DN32	4.1	Tri-CTR DN32	7.2

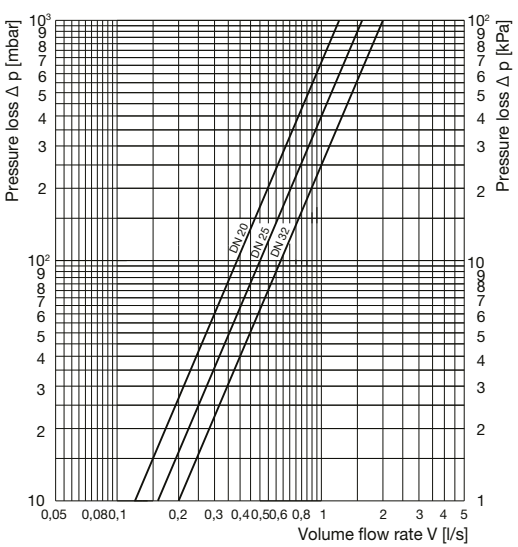
* on request, it is possible to supply a thermostatic head with capillary TR-K2 4070 with a setting range of 40–70 °C
** the kvs value indicates the flow through the valve in m3/h at full opening and a pressure drop across the valve of 100 kPa

two-way valve AV6

5 2 K deviations of P

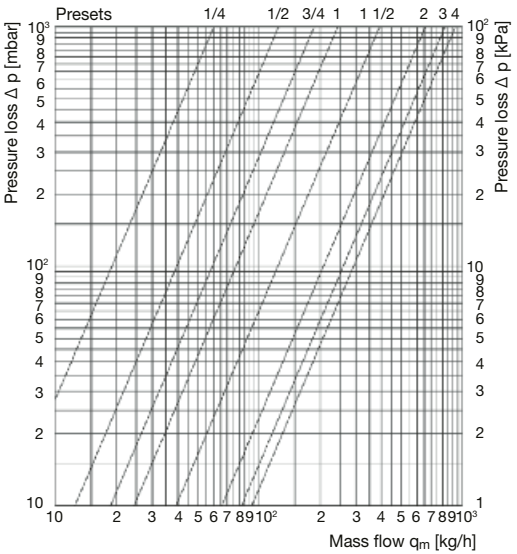


three way valve Tri-CTR

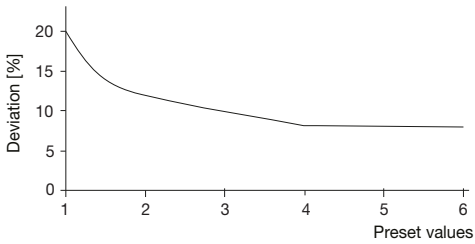


two-way valve A DN32

2 K deviations of P



Flow tolerance depending on presetting according to DIN EN 215 at 2 K deviations of P



Performance data

Presets	1/4	1/2	3/4	1	1 1/2	2	3	4
k_v value at 1 K of P deviation	0.060	0.123	0.180	0.228	0.330	0.460	0.500	0.520
k_v value at 1.5 K of P deviation	0.060	0.125	0.185	0.239	0.370	0.580	0.680	0.740
k_v value at 2 K of P deviation	0.060	0.125	0.187	0.244	0.390	0.660	0.820	0.920

Performance data

Presets	1	2	3	4	5	6
k_v value at 1 K of P deviation	0.055	0.141	0.221	0.247	0.280	0.320
k_v value at 1.5 K of P deviation	0.055	0.170	0.296	0.370	0.420	0.490
k_v value at 2 K of P deviation	0.055	0.170	0.313	0.446	0.560	0.650