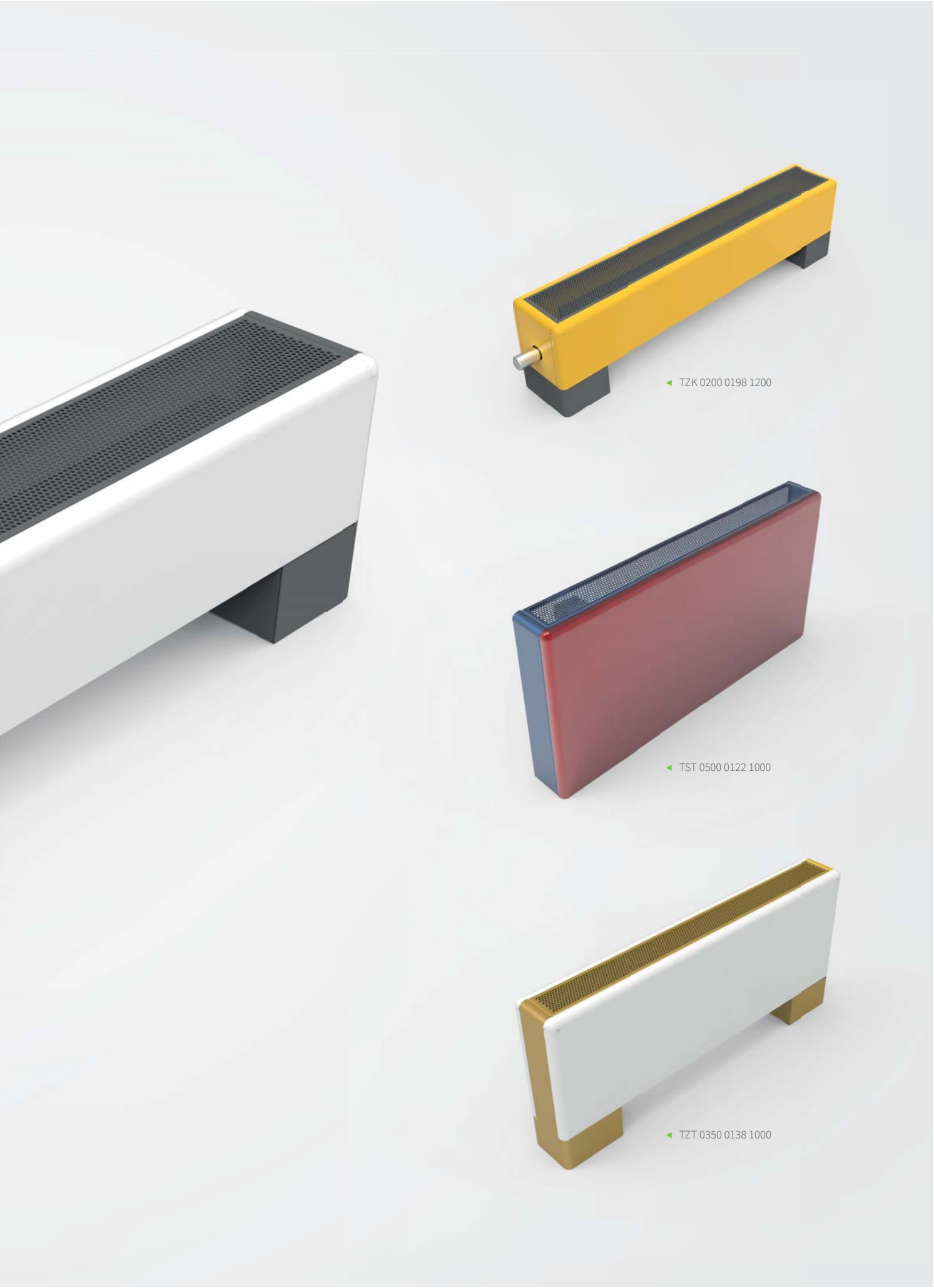
ECOLITE ROUND

Self-standing and Wall-mounted Convector Heaters

New series of convectors with rounded edges. Their elegant look can be used in both modern and historic buildings but also where itsrounded shapeprovides a prevention of injury: nurseries, schools and health facilities.

◂ TZK 0200 0198 1200


TZK 0200 0198 1200
TST 0500 0122 1000
TZT 0350 0138 1000

TST Fan-operated wall-mounted convector heaters

Fan-operated wall-mounted heaters are distinctive for their compact appearance. The rounded edges will perfectly complement both modern and historic interiors as well as environments with increased safety requirements. The electrothermal actuator for heating fluid flow control, as well as the water connection piping, is concealed inside the heater unit. The installed 24V DC fan effectively balances out extreme temperature variations experienced during winter by supplying a sufficient heat output, promptly responding to changes in temperature and securing high heat performance even when operated in low-temperature heating systems.

- Passive and low-energy houses
- Entrance areas, lobbies
- Shopping malls, airport lounges
- Schools, preschools
- Hospitals, retirement homes
- Institutions for people with reduced mobility
- Hotels

Standard Equipment

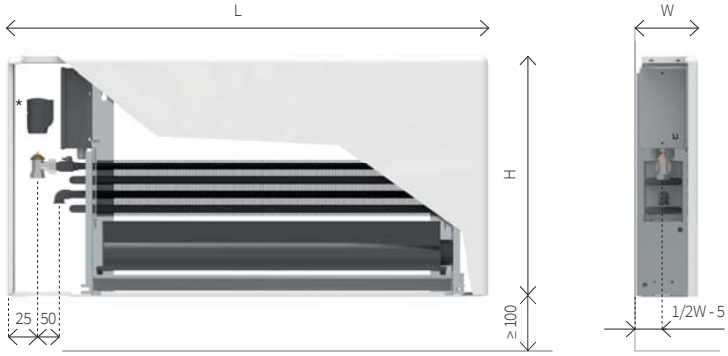
Cover	surface-treated steel sheet metal with an epoxy polyester powder coating
Grille	round or rectangular holes as per order specifications; grille is securely attached to the cover
Heat-exchanger	black painted Al-Cu lamellar heat-exchanger with a air vent valve, 2 × G1/2" inner threads
Fan	Modern tangential fan with 24 V DC EC motor with high efficiency, rotors protection
Valve	corner thermostatic valve, M30 x 1.5 thread with a 2.5 mm pitch
Mounting	wall brackets with connecting elements

Operating Conditions

Max. operating temp.	110°C
Max. operating excess pressure	1 MPa (10 bar)
Protection	IP20
Ambient conditions	temperature T = +2 to +40°C humidity Rh = 20 to 70%
Operating voltage	24 V DC

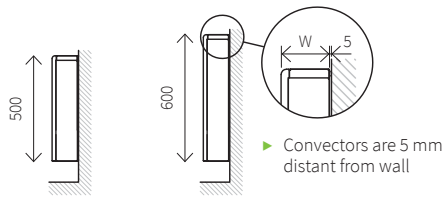
Convector Heater Options and Size Variations

Standard valve connection V



* electrothermal actuator not supplied with the heater

Convector heater size variations



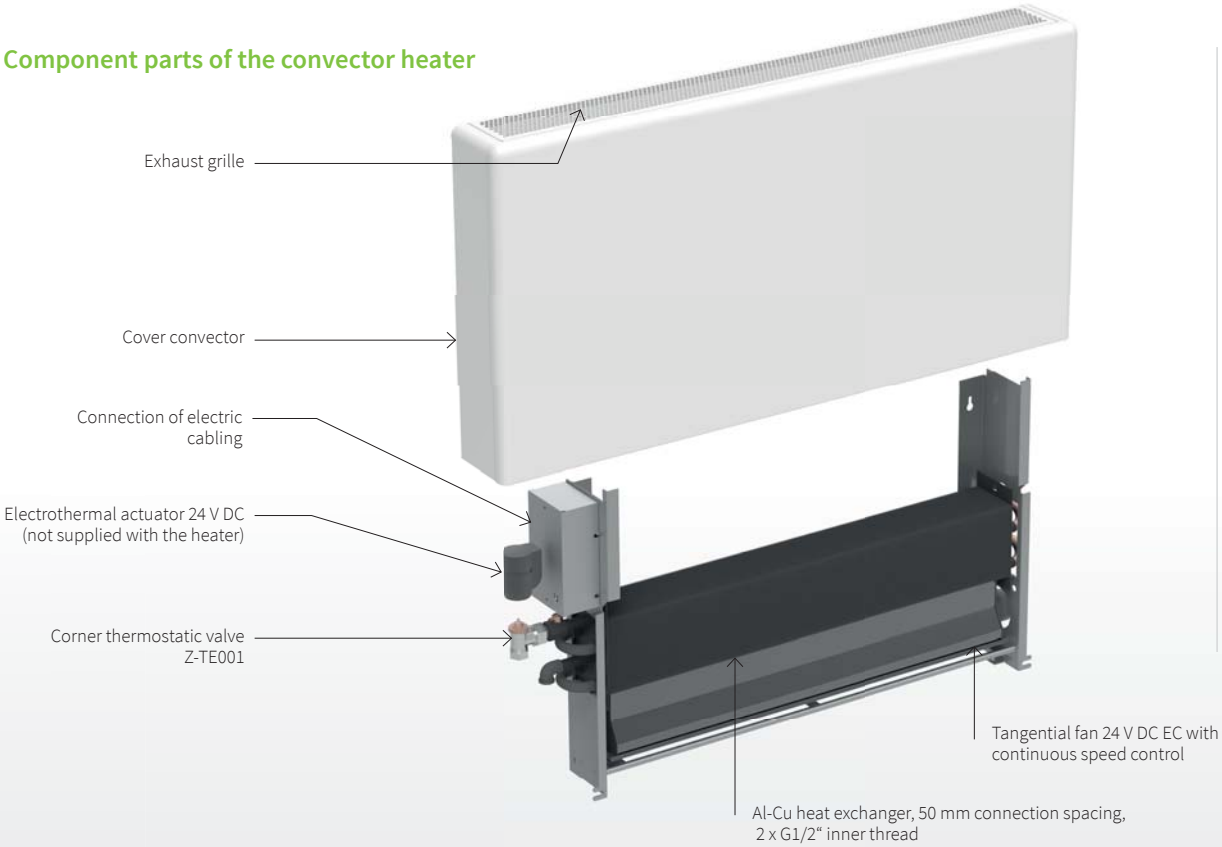
Height H [mm]	500	600
Width W [mm]	122 182	122 182
Length L [mm]	700-2 600	700-2 600

Energy saving

ECO& SAFE VOLTAGE 24

Fan convectors operate on safe voltage of 24 V DC. The fan motors have very low consumption of electric power. The speed of fans is continuously commanded by controlling voltage of 0...10 V DC.

Component parts of the convector heater



Accessories

▸ Details of accessories on the page 8

Grilles

Grille R
- rectangular holes

Grille C
- round holes

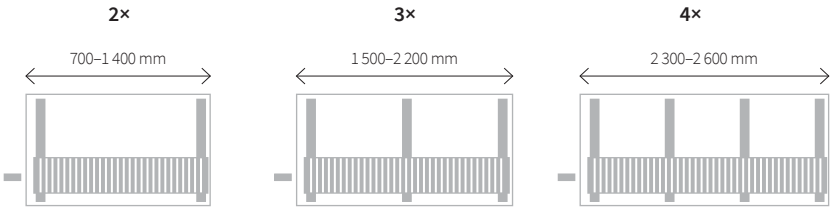
tip Order grilles and stands in colours that vary from the cover to brighten up your interior

▸ Options and grilles details, page 5

Brackets

W brackets
Wall brackets for attaching heat exchanger and convector cover are parts of the convector.

Number of brackets as per the body length



Coding

TST	0500	0182	1200	C	01	R	1	V	L	W	
Model	**Height H**	**Width W**	**Length L**	**Material**	**Colour**	**Grille**	**Grille colour**	**Connection type**	**Connection side**	**Brackets**	**Atypical**
TST	0500 mm 0600 mm	0122 mm 0182 mm	700 mm 1000 mm 1200 mm ... 2400 mm 2600 mm	**C** Sheet steel with surface finish and an epoxy polyester powder coating	As per RAL colour chart Structured colours Metallic paint colours See colour chart, page 57	**R** rectangular holes **C** round holes	**1** Same as cover colour **9** Grille in different colour	**V** With corner thermo-static valve, bottom connection, 50 mm spacing	**L** Left side **R** Right side	**W** brackets for wall mounting	Empty position for standard **A** In non-standard heater configu-rations

▸ Other options, see page 59

TST - Fan-operated wall-mounted convectors heating output

Height 500 mm / Width 122 mm

75/65/20°C	Speed [-] / Heating output [W]				
Length [mm]	0	1	2	3	4 max
700	274	658	898	1 137	1 305
1000	452	1 325	1 810	2 291	2 629
1200	572	1 741	2 378	3 010	3 455
1400	691	2 128	2 907	3 679	4 222
1600	810	2 399	3 277	4 147	4 760
1800	929	2 651	3 620	4 582	5 259
2000	1 048	3 067	4 188	5 301	6 084
2200	1 167	3 483	4 756	6 020	6 909
2400	1 286	3 869	5 285	6 689	7 677
2600	1 405	4 256	5 813	7 358	8 444

Exponent n = 1,079

55/45/20°C	Speed [-] / Heating output [W]				
Length [mm]	0	1	2	3	4 max
700	158	379	518	655	752
1000	261	764	1 043	1 320	1 515
1200	329	1 003	1 370	1 734	1 991
1400	398	1 226	1 675	2 120	2 433
1600	467	1 382	1 888	2 390	2 743
1800	535	1 527	2 086	2 640	3 030
2000	604	1 767	2 413	3 055	3 506
2200	672	2 007	2 741	3 469	3 981
2400	741	2 230	3 045	3 854	4 424
2600	810	2 453	3 350	4 240	4 866

Height 500 mm / Width 182 mm

75/65/20°C	Speed [-] / Heating output [W]				
Length [mm]	0	1	2	3	4 max
700	474	815	1 101	1 359	1 558
1000	782	1 641	2 218	2 738	3 139
1200	988	2 156	2 914	3 598	4 125
1400	1 194	2 635	3 561	4 397	5 041
1600	1 400	2 971	4 015	4 957	5 683
1800	1 606	3 282	4 435	5 476	6 278
2000	1 812	3 797	5 131	6 336	7 264
2200	2 018	4 312	5 828	7 195	8 249
2400	2 224	4 791	6 475	7 995	9 166
2600	2 429	5 270	7 123	8 794	10 082

Exponent n = 1,083

55/45/20°C	Speed [-] / Heating output [W]				
Length [mm]	0	1	2	3	4 max
700	272	468	633	782	896
1000	450	944	1 275	1 575	1 805
1200	568	1 240	1 676	2 069	2 372
1400	687	1 515	2 048	2 529	2 899
1600	805	1 708	2 309	2 851	3 268
1800	924	1 887	2 551	3 149	3 611
2000	1 042	2 184	2 951	3 644	4 177
2200	1 160	2 480	3 351	4 138	4 744
2400	1 279	2 755	3 724	4 598	5 271
2600	1 397	3 031	4 096	5 057	5 798

Height 600 mm / Width 122 mm

75/65/20°C	Speed [-] / Heating output [W]				
Length [mm]	0	1	2	3	4 max
700	305	724	956	1 182	1 335
1000	505	1 459	1 926	2 382	2 690
1200	637	1 917	2 530	3 130	3 535
1400	770	2 343	3 092	3 825	4 320
1600	903	2 641	3 486	4 312	4 870
1800	1 036	2 918	3 851	4 764	5 381
2000	1 169	3 376	4 456	5 511	6 225
2200	1 301	3 834	5 060	6 259	7 069
2400	1 434	4 260	5 623	6 955	7 855
2600	1 567	4 686	6 185	7 650	8 640

Exponent n = 1,095

55/45/20°C	Speed [-] / Heating output [W]				
Length [mm]	0	1	2	3	4 max
700	175	414	546	676	763
1000	288	834	1 101	1 361	1 538
1200	364	1 096	1 446	1 789	2 020
1400	440	1 339	1 768	2 186	2 469
1600	516	1 510	1 993	2 465	2 784
1800	592	1 668	2 201	2 723	3 075
2000	668	1 930	2 547	3 150	3 558
2200	744	2 192	2 892	3 578	4 041
2400	820	2 435	3 214	3 975	4 490
2600	896	2 679	3 535	4 373	4 939

Height 600 mm / Width 182 mm

75/65/20°C	Speed [-] / Heating output [W]				
Length [mm]	0	1	2	3	4 max
700	484	897	1 171	1 413	1 594
1000	800	1 807	2 359	2 847	3 212
1200	1 011	2 374	3 100	3 741	4 220
1400	1 222	2 901	3 789	4 572	5 158
1600	1 432	3 271	4 271	5 154	5 815
1800	1 643	3 614	4 719	5 694	6 424
2000	1 853	4 181	5 459	6 587	7 432
2200	2 064	4 748	6 200	7 481	8 441
2400	2 275	5 275	6 889	8 312	9 378
2600	2 485	5 803	7 578	9 143	10 316

Exponent n = 1,105

55/45/20°C	Speed [-] / Heating output [W]				
Length [mm]	0	1	2	3	4 max
700	275	510	666	804	907
1000	455	1 027	1 342	1 619	1 827
1200	575	1 350	1 763	2 127	2 400
1400	695	1 650	2 155	2 600	2 933
1600	814	1 860	2 429	2 931	3 307
1800	934	2 055	2 683	3 238	3 653
2000	1 054	2 377	3 105	3 746	4 227
2200	1 174	2 700	3 526	4 254	4 800
2400	1 294	3 000	3 917	4 727	5 333
2600	1 413	3 300	4 309	5 200	5 866

TST - Heating output recalculation for another temperature gradient

To obtain the heating output for a different temperature gradient multiply heating output value at 75/65/20 ° C by the below mentioned factor **f**.

Example
Heating output of the convector TST 0500 0182 1400 for temperature gradient 70/55°C
1. Output 75/65/20 ° C = 3 561 W
2. Factor from the table for 70/55/20 ° C at 182 width: f = 0,839
3. Output 70/55/20 ° C = f x 3561 = 2 988 W

Height [mm]	90/70 °C	82/71 °C	70/55 °C	70/50°C	50/40 °C
0500 0122	1,217	1,141	0,839	0,768	0,466
0500 0182	1,218	1,142	0,839	0,767	0,465
0600 0122	1,221	1,143	0,837	0,765	0,461
0600 0182	1,223	1,145	0,836	0,763	0,458

Room temperature 20 °C

Recalculation to other temperature gradients

Convector heating output reckoning follows by recalculation of the standardized output Qn 75/65/20 °C

Q = Qn*Ψ*(ΔT/50)^n [W]; where ΔT = ((T1+T2)/2)−Ti [°C]

Qn [W]	heating output for temperature gradient
Ψ [-]	mass rate of flow coefficient (for current flow rate Ψ = 1)
T1 [°C]	input water temperature
T2 [°C]	output water temperature
Ti [°C]	temperature in the room
n [-]	temperature exponent

Heating water flow rate through exchanger

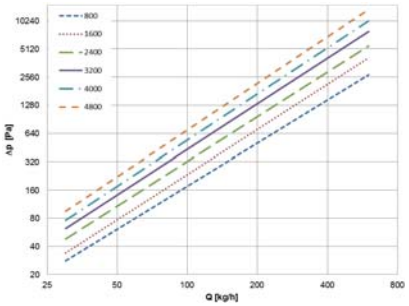
To reach the required heating output we determine the desired flow of heating water through the convector exchanger. We calculate it from heating output of the convector for the selected input and output temperatures of heating water.

M = 0,86 * Q / (T1-T2) [kg / h]

M [kg/h]	mass rate of flow, heating water flowing through exchanger
Q [W]	convector heating output
T1-T2 [°C]	difference between input and output temperature
0,86	invariable for recalculation of units

Table of hydraulic parameters of exchangers

For hydraulic parameters of exchangers see the page 50.



Acoustic pressure [dB(A)]

Length [mm]	Speed [-] / Acoustic pressure [dB(A)]				
	0	1	2	3	4 max
700	-	<20	27	37	45
1000	-	22	30	40	45
1200	-	22	31	41	45
1400	-	22	31	41	45
1600	-	23	32	42	46
1800	-	24	33	43	47
2000	-	25	33	43	48
2200	-	26	34	44	49
2400	-	27	35	45	50
2600	-	28	36	46	51

Fans input power [W]

Length [mm]	Speed [-] / Fans input power [W]				
	0	1	2	3	4 max
700	-	1 W	2 W	3 W	5 W
1000	-	2 W	3 W	6 W	9 W
1200	-	2 W	3 W	6 W	9 W
1400	-	3 W	6 W	10 W	17 W
1600	-	3 W	5 W	10 W	14 W
1800	-	4 W	6 W	12 W	17 W
2000	-	4 W	6 W	12 W	17 W
2200	-	4 W	7 W	13 W	18 W
2400	-	5 W	9 W	16 W	25 W
2600	-	6 W	11 W	20 W	33 W

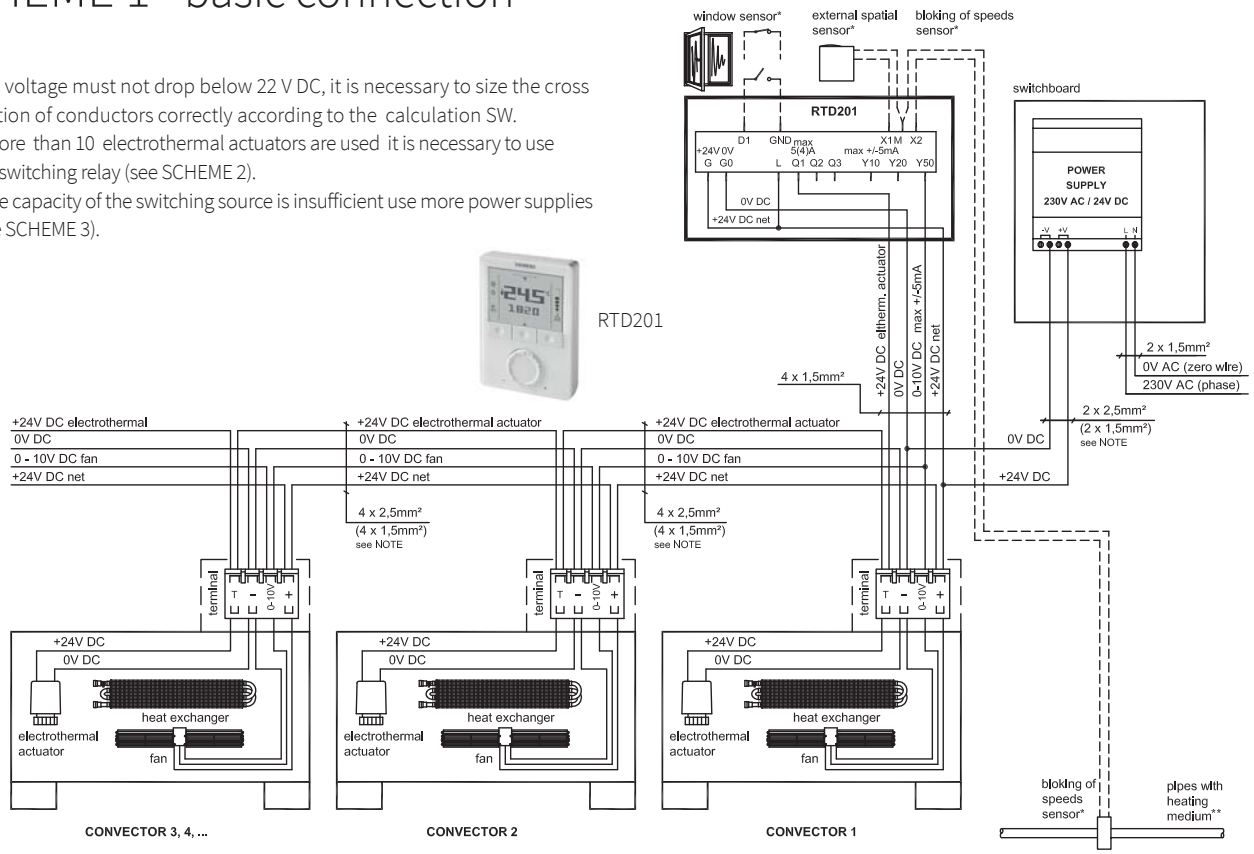
* Approximate fan input powers /When using electrothermal actuator add in the convector's power 3 W

Electrical diagram

SCHEME 1 - basic connection

Note

- The voltage must not drop below 22 V DC, it is necessary to size the cross section of conductors correctly according to the calculation SW.
- If more than 10 electrothermal actuators are used it is necessary to use the switching relay (see SCHEME 2).
- If the capacity of the switching source is insufficient use more power supplies (see SCHEME 3).

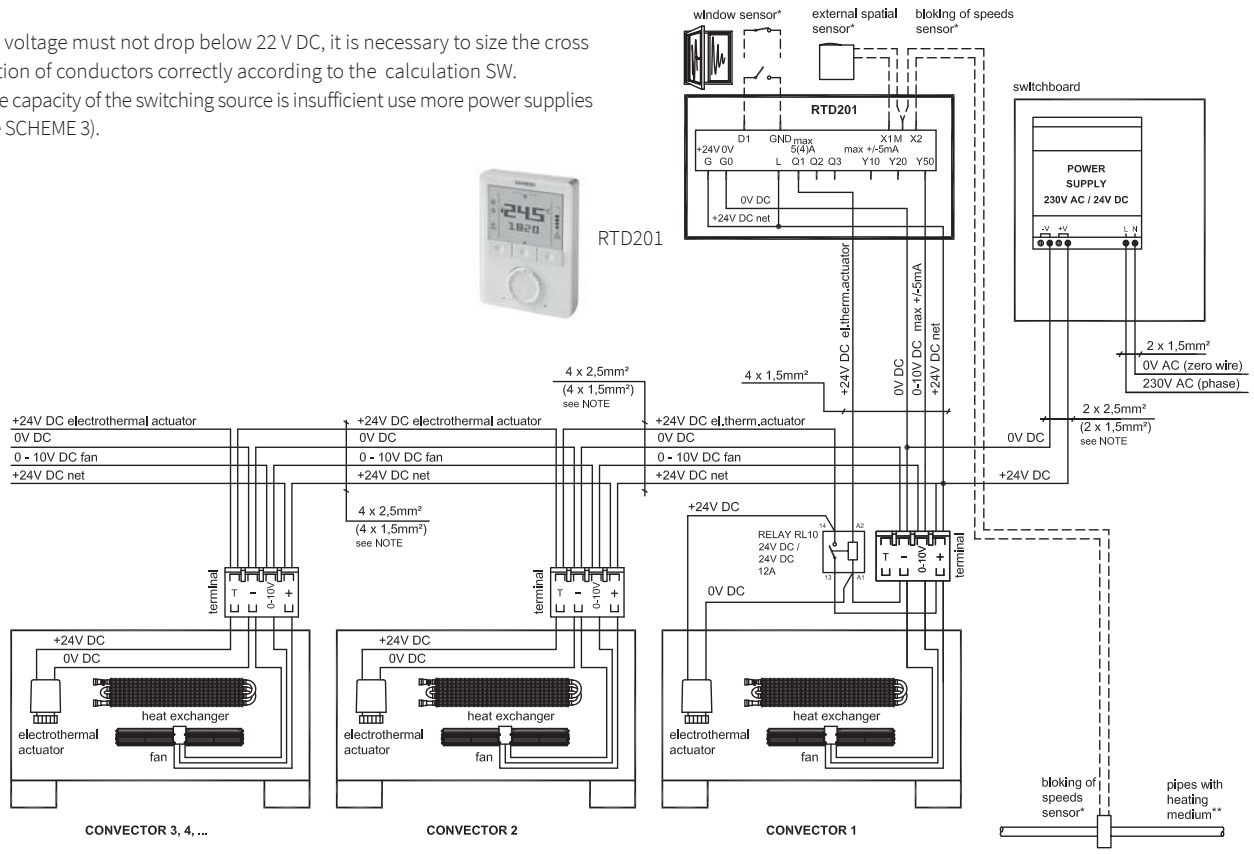


* accessories / ** The temperature sensor (block of revs) must be fixed on the tube, through which the heating medium freely flows and which is not closed by the actuator.

SCHEME 2 - connection with more than 10pcs of electrothermal actuator

Note

- The voltage must not drop below 22 V DC, it is necessary to size the cross section of conductors correctly according to the calculation SW.
- If the capacity of the switching source is insufficient use more power supplies (see SCHEME 3).



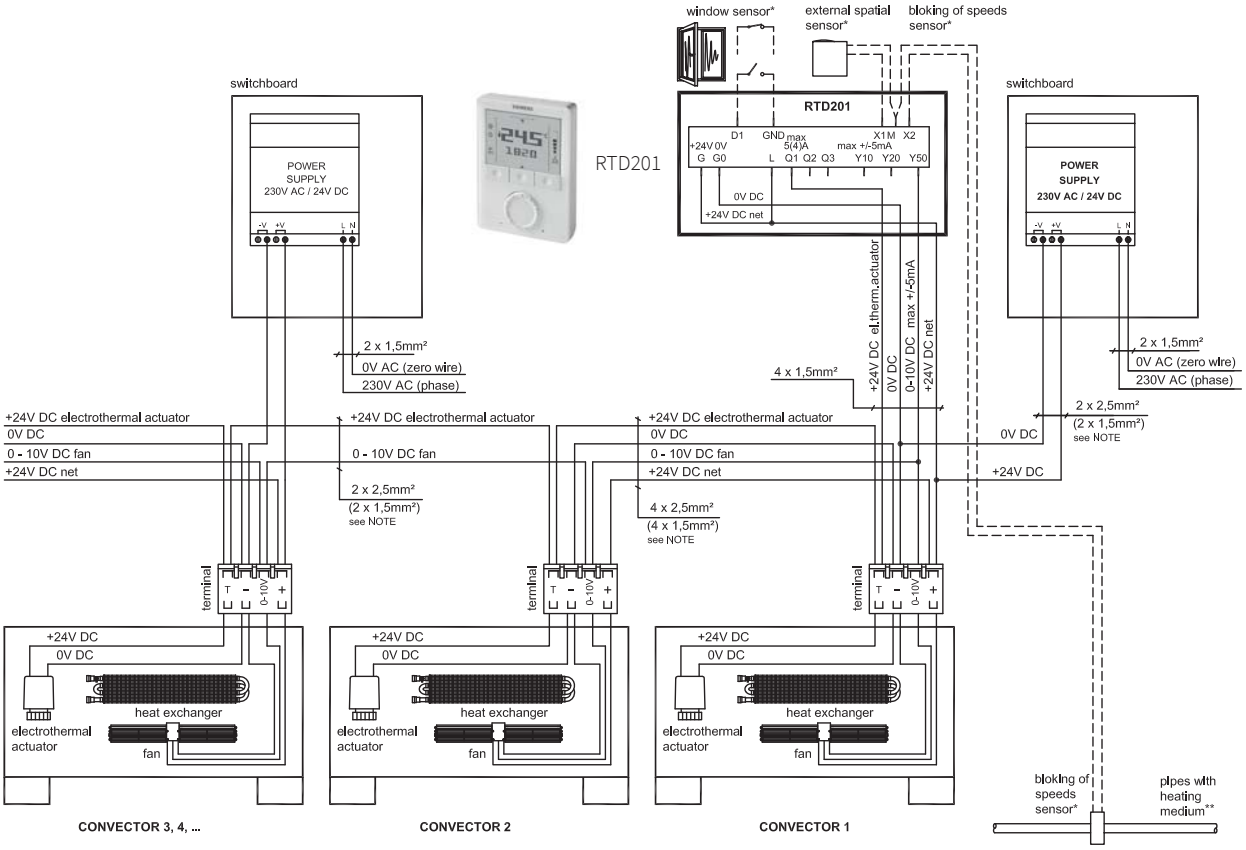
* accessories / ** The temperature sensor (block of revs) must be fixed on the tube, through which the heating medium freely flows and which is not closed by the actuator.

Electrical diagram

SCHEME 3 - connection with more supplies

Note

- The voltage must not drop below 22 V DC, it is necessary to size the cross section of conductors correctly according to the calculation SW.
- If more than 10 electrothermal actuators are used it is necessary to use the switching relay (see SCHEME 2).
- All sources shall be powered from a single circuit breaker.

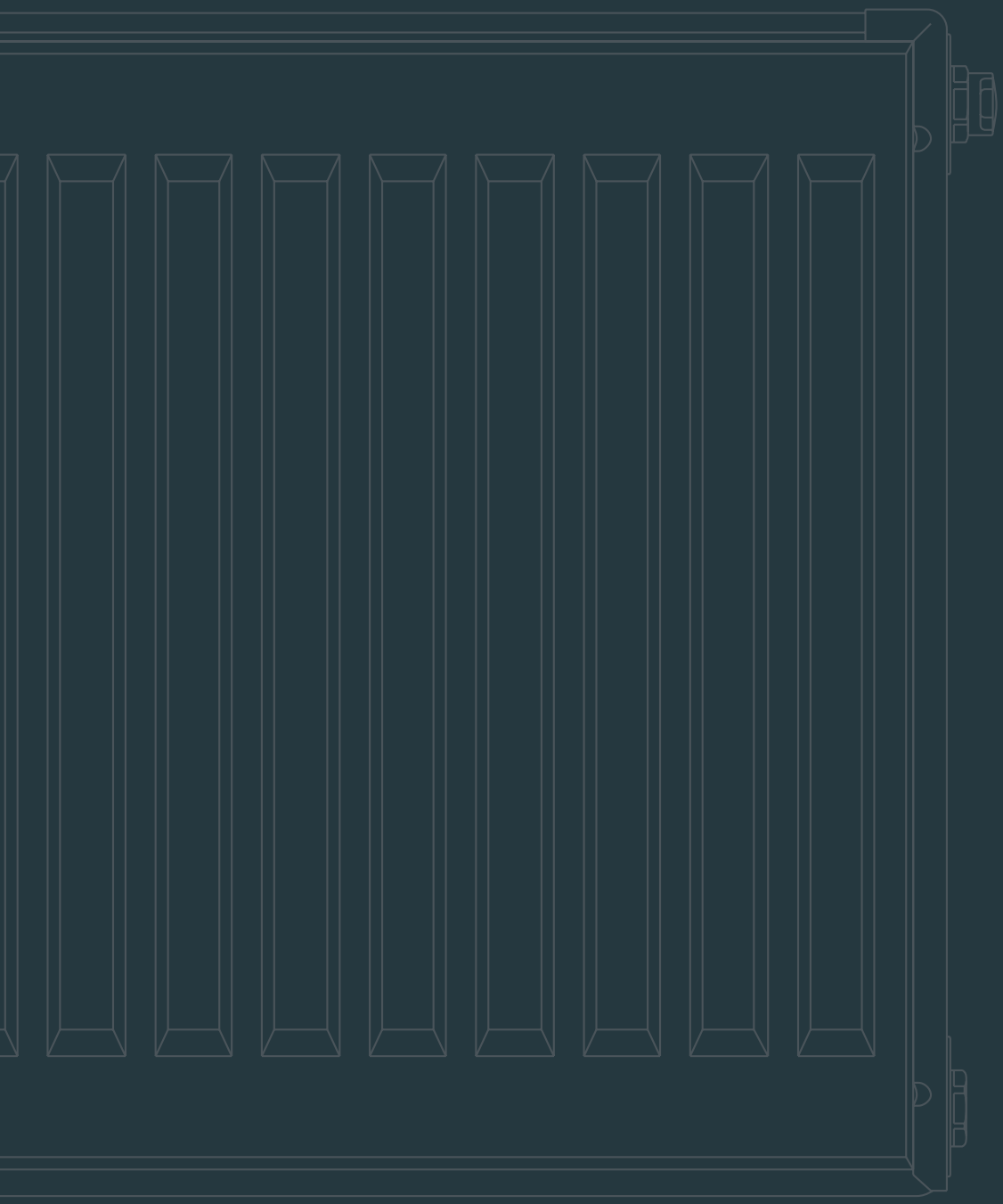


* accessories / ** The temperature sensor (block of revs) must be fixed on the tube, through which the heating medium freely flows and which is not closed by the actuator.

Orientation colour card

colour series	**RAL9016**	
shade	snow white	
finish	-	
order code	01	
colour series	**RAL9010**	
shade	white	
finish	-	
order code	02	
colour series	**RAL9001**	
shade	ivory	
finish	-	
order code	04	
colour series	**RAL9015**	
shade	jasmine	
finish	-	
order code	12	
colour series	**S09**	
shade	snow white	
finish	structure	
order code	68	
colour series	**S08**	
shade	ivory	
finish	structure	
order code	67	
colour series	**S07**	
shade	bamboo	
finish	-	
order code	66	
colour series	**S06**	
shade	sunbeam	
finish	structure	
order code	65	
colour series	**S04**	
shade	gold	
finish	metallic paint	
order code	63	
colour series	**S18**	
shade	curry	
finish	structure	
order code	77	
colour series	**S16**	
shade	chilli	
finish	-	
order code	75	
colour series	**S17**	
shade	burnt brick	
finish	structure	
order code	76	
colour series	**S13**	
shade	sandstone	
finish	structure	
order code	72	
colour series	**S14**	
shade	cane	
finish	structure	
order code	73	
colour series	**RAL6019**	
shade	pistachio	
finish	-	
order code	45	
colour series	**S12**	
shade	ice	
finish	structure	
order code	71	
colour series	**S11**	
shade	sky	
finish	-	
order code	70	
colour series	**S15**	
shade	steel blue	
finish	-	
order code	74	
colour series	**S01**	
shade	aluminum	
finish	metallic	
order code	60	
colour series	**S03**	
shade	copper	
finish	metallic	
order code	62	
colour series	**S19**	
shade	brass	
finish	-	
order code	83	
colour series	**RAL7024**	
shade	grey	
finish	-	
order code	39	
colour series	**S05**	
shade	silver	
finish	metallic	
order code	64	
colour series	**RAL9006**	
shade	metal	
finish	-	
order code	20	
colour series	**S02**	
shade	anthracite	
finish	metallic	
order code	61	
colour series	**RAL8017**	
shade	chocolate	
finish	-	
order code	46	
colour series	**S10**	
shade	slate	
finish	structure	
order code	69	
colour series	**RAL9005**	
shade	black	
finish	-	
order code	19	

Brenner
RADIATORER APS



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