RENS

HIGH-QUALITY PANEL RADIATORS

Reliability and ease of use

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Steel radiators RENS are intended for use in central and individual heating systems with an operating pressure of 10 bar and a coolant temperature of no more than 110°C. Devices can connect to all types of pipes: black, galvanized and stainless steel, copper and polymer pipes with an anti-diffusion layer.

Radiators RENS can be installed in one- and two-pipe heating systems with forced circulation of the coolant.

The system should be of a closed type with a membrane expansion tank.

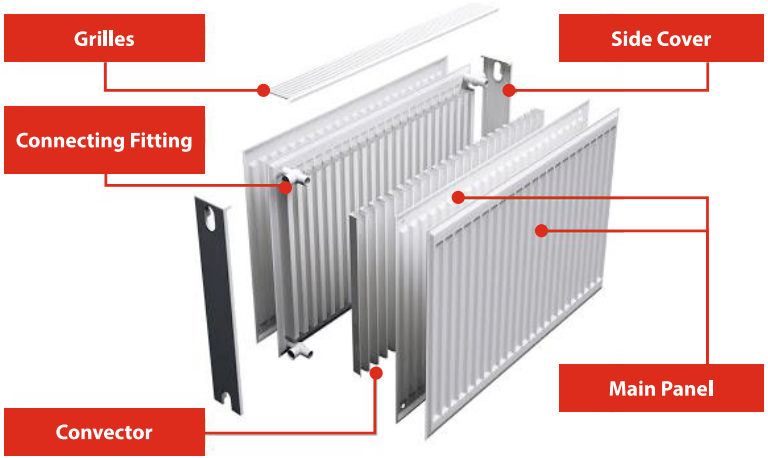
Steel radiators are used for heating office, residential and other premises where there is no corrosive action of substances in the air. And there is also no possibility of wetting the surface of the devices.

Radiators RENS are available in two versions - Standart with side connection and Ventill Compact with lower right connection.

RENS STANDARD

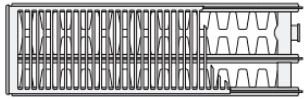
RENS VENTIL COMPACT

Steel radiators RENS heating devices consist of several components: main heating panel, convector, s ide covers (2 pieces), grille, connecting fittings, and thermostat valve (for Ventill Compact models).
The covers are installed on the radiator directly at the factory, ensuring the integrity of the product structure and assembly stability.



The number of main panels and convectors depends on the type of steel radiator.

TABLE OF PANEL RADIATOR TYPES

Type	Number of panels	Number of heating convectors
11	1	1
21	2	1
22	2	2
33	3	3
11		
21		
22		
33		

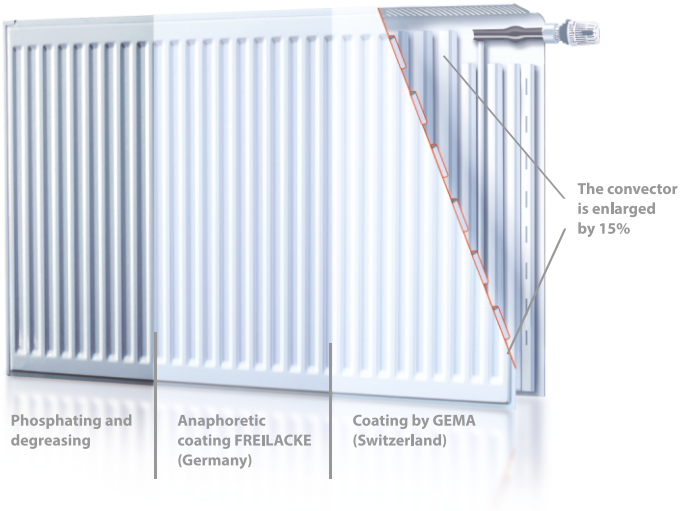
To enhance heat transfer efficiency, the channels through which the heat carrier flows are spaced 33.3 mm apart. The L-shaped wall suspension design provides installation flexibility and compatibility with other types of wall mounts. After passing through the production line, the finished radiator only requires painting and packaging.

Radiators RENS are made from cold-rolled steel sheet according to EN10130. Component assembly is carried out on automated lines by the Italian company Leas SpA.

To improve corrosion resistance and aesthetic appearance, radiators undergo multi-stage processing and painting. The line consists of 10 treatment baths, tunnel drying, an automatic powder booth, and an oven.

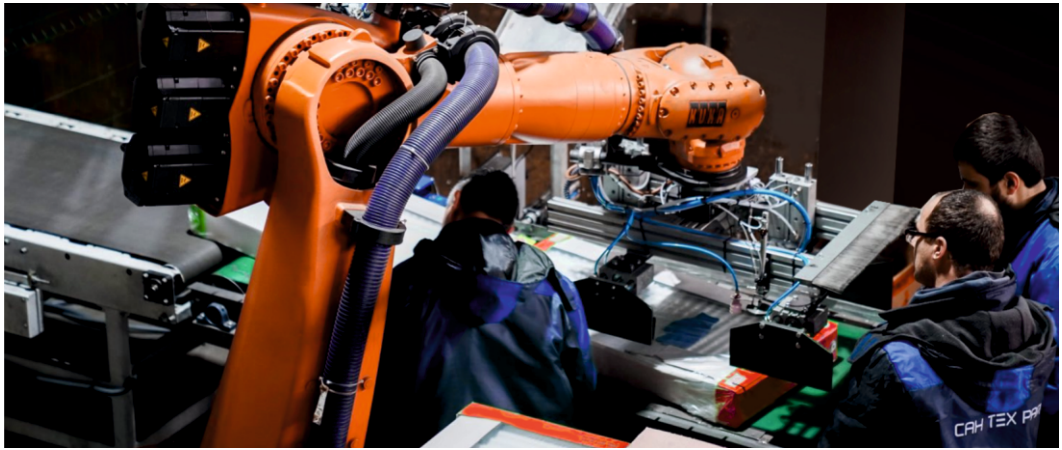
Thus, the steel radiator goes through the following stages:

- Cleaning the external surfaces;
- Degreasing;
- Iron phosphating of the surface;
- Application of anti-corrosion coating by anaphoresis;
- Drying of prepared products before powder coating;
- Powder coating with special epoxy-polyester paint;
- Polymerization of the applied coating in the oven at a temperature of approximately 180°C.



During the process of applying anti-corrosion coating to radiators RENS, the standard primer is replaced with an anaphoresis coating. This process is characterized by stability and uniformity of the coating, with improved anti-corrosion properties.
The standard color for all radiators RENS is white (RAL9016).

Steel radiators RENS are supplied in their original factory packaging. Plastic profiles on the corners provide additional protection against mechanical damage during transportation.



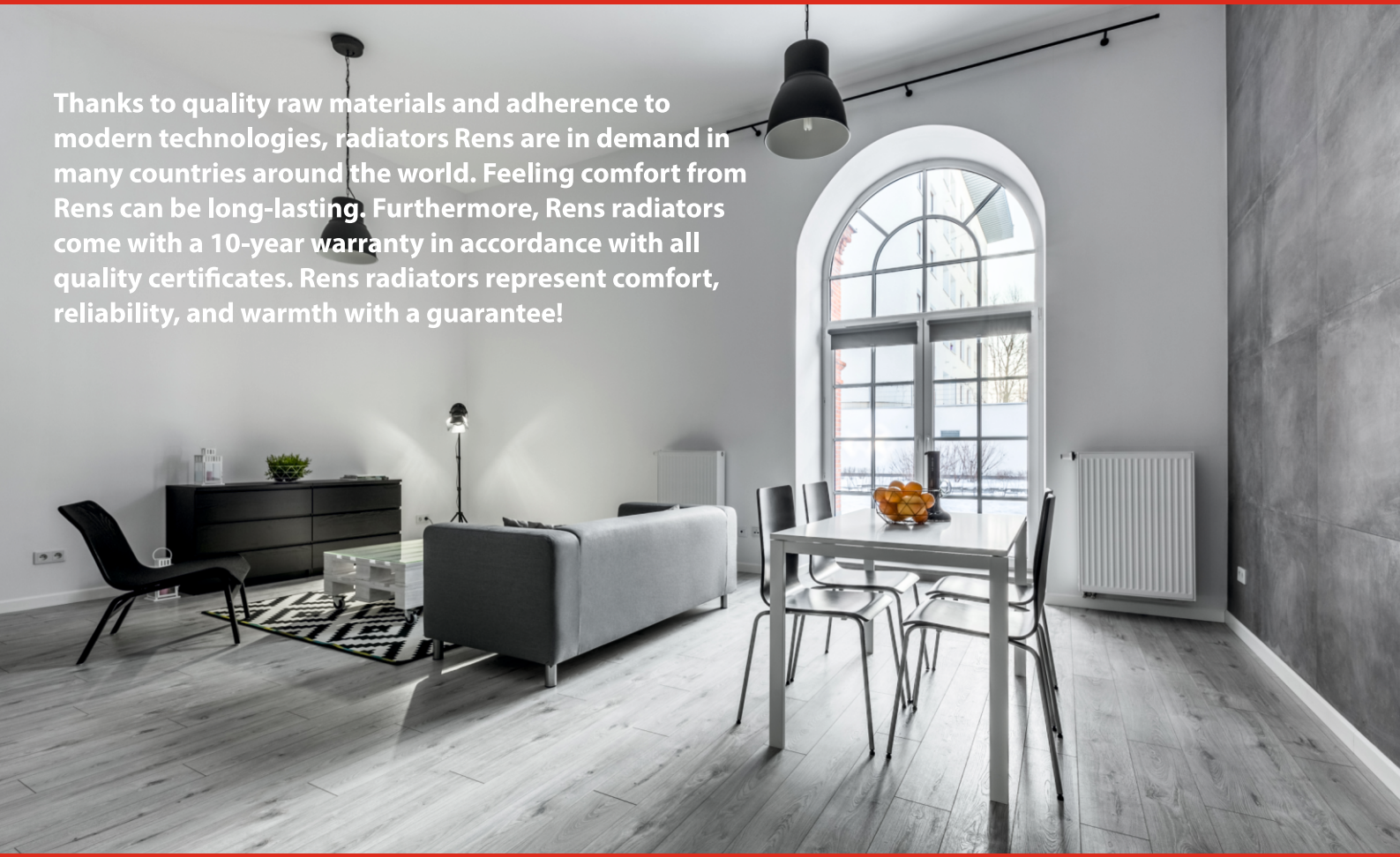
Steel radiators RENS are produced in accordance with European standards. This is confirmed by the ISO 9001-2015 certificate. The use of high-quality materials and high production standards allows Rens to offer a 10-year warranty on its radiators. Additionally, the devices are insured against material and personal damages. Proven quality and affordable pricing have opened the doors for Rens radiators not only in the Ukrainian market but also in other countries such as Moldova, Azerbaijan, Mongolia, Uzbekistan, Georgia, Kazakhstan, and EU countries.

Parameters	Value
Maximum Temperature of Heat Carrier (°C)	110
Operating Pressure (bar)	10
Test Pressure (bar)	13

Height	Parameters	Type 11	Type 21	Type 22	Type 33
200 mm	W/m, T = 50 °C (EN442)	353	512	635	826
	W/m, T = 60 °C (DIN4704)	446	648	805	1046
	W/m, T = 70 °C	539	784	975	1277
	l/m	1,4	2,6	2,6	4
	n coefficient	1,2772	1,2926	1,3016	1,2949
300 mm	W/m, T = 50 °C (EN442)	570	731	1050	1346
	W/m, T = 60 °C (DIN4704)	740	925	1380	1707
	W/m, T = 70 °C	800	1150	1470	2062
	l/m	1,87	3,5	3,5	5,3
	n coefficient	1,2894	1,2886	1,309	1,3031
400 mm	W/m, T = 50 °C (EN442)	711	963	1221	1699
	W/m, T = 60 °C (DIN4704)	895	1210	1540	2146
	W/m, T = 70 °C,	1085	1465	1872	2611
	l/m	2,24	4,37	4,37	6,47
	n coefficient	1,2918	1,3005	1,3146	1,3109

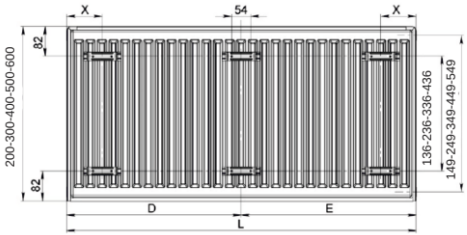
Height	Parameters	Type 11	Type 21	Type 22	Type 33
500 mm	W/m, T = 50 °C (EN442)	890	1089	1767	2279
	W/m, T = 60 °C (DIN4704)	1120	1383	2269	2910
	W/m, T = 70 °C	1190	1760	2568	3667
	l/m	2,62	5,13	5,13	7,63
	n coefficient	1,2941	1,3125	1,3201	1,3187
600 mm	W/m, T = 50 °C (EN442)	1030	1258	1800	2361
	W/m, T = 60 °C (DIN4704)	1310	1602	2270	3007
	W/m, T = 70 °C	1390	2047	2420	3648
	l/m	3	5,9	5,9	8,8
	n coefficient	1,2965	1,3244	1,3257	1,3265

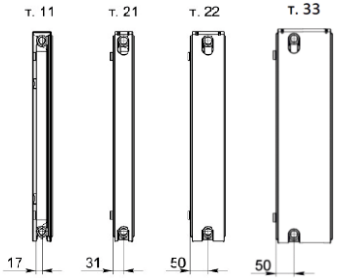
Parameters	Value
Maximum Temperature of Heat Carrier (°C)	110
Operating Pressure (bar)	10
Test Pressure (bar)	13



Thanks to quality raw materials and adherence to modern technologies, radiators Rens are in demand in many countries around the world. Feeling comfort from Rens can be long-lasting. Furthermore, Rens radiators come with a 10-year warranty in accordance with all quality certificates. Rens radiators represent comfort, reliability, and warmth with a guarantee!

Radiator Mounting





Length L mm	Type 11			Type 21			Type 22			Type 33			Number fasteners
	X, мм	D, мм	E, мм	X, мм	D, мм	E, мм	X, мм	D, мм	E, мм	X, мм	D, мм	E, мм	
400	116,7	-	-	100	-	-	100	-	-	100	-	-	4
...													
1500	116,7	-	-	100	-	-	100	-	-	100	-	-	4
1600	116,7	783	817	100	800	800	100	800	800	100	800	800	6
1800	116,7	883	917	100	900	900	100	900	900	100	900	900	6
2000	116,7	983	1017	100	1000	1000	100	1000	1000	100	1000	1000	6
2200	116,7	1083	1117	100	1100	1100	100	1100	1100	100	1100	1100	6
2400	116,7	1183	1217	100	1200	1200	100	1200	1200	100	1200	1200	6
2600	116,7	1283	1317	100	1300	1300	100	1300	1300	100	1300	1300	6
2800	116,7	1383	1417	100	1400	1400	100	1400	1400	100	1400	1400	6
3000	116,7	1483	1517	100	1500	1500	100	1500	1500	100	1500	1500	6

High Heat Output

Heat output Q (W) for water heat carrier

20 °C		Type 11					Type 21					Type 22					Type 33				
Length mm	t1/t2 , °C	Height,mm																			
		200	300	400	500	600	200	300	400	500	600	200	300	400	500	600	200	300	400	500	600
400	75/65	141	228	259	356	412	205	328	385	504	578	254	420	481	610	720	330	538	680	815	944
	90/70	178	296	328	448	524	259	426	484	635	734	322	552	612	780	908	418	683	863	1036	1203
500	75/65	177	285	324	445	515	256	412	482	629	723	318	525	602	762,5	900	413	673	850	1019	1181
	90/70	223	370	409	560	655	324	532	605	793	918	403	690	764	975	1135	523	853	1079	1295	1503
600	75/65	212	342	388	534	618	307	495	578	755	867	381	630	722	915	1080	496	808	1019	1222	1417
	90/70	267	444	491	672	786	389	639	726	952	1101	483	828	917	1170	1362	628	1024	1295	1554	1804
700	75/65	247	399	453	623	721	358	577	674	881	1011	445	735	842	1067,5	1260	578	942	1189	1426	1653
	90/70	312	518	573	784	917	454	745	847	1110	1285	564	966	1070	1365	1589	732	1195	1510	1813	2105
800	75/65	282	456	518	712	824	410	660	770	1007	1156	508	840	962	1220	1440	661	1077	1359	1630	1889
	90/70	356	592	655	896	1048	518	851	968	1269	1469	644	1104	1223	1560	1816	837	1366	1726	2073	2406
900	75/65	318	513	582	801	927	461	742	867	1133	1300	572	945	1083	1372,5	1620	743	1211	1529	1833	2125
	90/70	401	666	737	1008	1179	593	958	1089	1428	1652	725	1242	1376	1755	2043	941	1536	1942	2332	2706
1000	75/65	353	570	647	890	1030	512	824	963	1259	1446	635	1050	1221	1525	1800	826	1346	1699	2037	2361
	90/70	446	740	819	1120	1310	648	1064	1210	1586	1836	805	1380	1540	1950	2270	1046	1707	2146	2591	3007
1100	75/65	388	627	712	979	1133	563	908	1059	1385	1590	699	1155	1323	1677,5	1980	909	1481	1869	2241	2597
	90/70	490	814	901	1232	1441	713	1171	1331	1745	2019	886	1518	1682	2145	2497	1151	1878	2373	2850	3308
1200	75/65	424	684	776	1068	1236	614	990	1156	1511	1374	762	1260	1444	1830	2160	991	1615	2039	2444	2833
	90/70	535	888	983	1344	1572	778	1277	1452	1904	2203	966	1656	1835	2340	2724	1255	2048	2589	3109	3608
1300	75/65	459	741	841	1157	1339	666	1073	1188	1636	1878	826	1365	1564	1982,5	2340	1074	1750	2209	2648	3069
	90/70	579	962	1064	1456	1703	842	1384	1506	2062	2386	1047	1794	1987	2535	2951	1360	2219	2805	3368	3909
1400	75/65	494	798	906	1246	1442	717	1155	1348	1763	2023	889	1470	1684	2135	2520	1156	1884	2379	2852	3305
	90/70	624	1036	1146	1568	1834	907	1490	1694	2221	2570	1127	1932	2140	2730	3178	1464	2390	3021	3627	4210

20°C		Type 11					Type 21					Type 22					Type 33				
Length mm	t1/t2, °C	Height,mm																			
		200	300	400	500	600	200	300	400	500	600	200	300	400	500	600	200	300	400	500	600
1500	75/65	530	855	971	1335	1545	768	1237	1371	1888	2168	953	1575	1805	2287,5	2700	1239	2019	2549	3055	3541
	90/70	668	1110	1228	1680	1965	972	1596	1738	2379	2754	1208	2070	2293	2925	3405	1569	2560	3237	3886	4510
1600	75/65	565	912	1035	1424	1648	819	1320	1541	2014	2312	1016	1680	1925	2440	2880	1322	2154	2718	3259	3778
	90/70	713	1184	1310	1792	2096	1037	1703	1936	2538	2937	1288	2208	2446	3120	3632	1674	2731	3452	4146	4811
1800	75/65	635	1026	1165	1602	1854	922	1485	1733	2266	2602	1143	1890	2165	2745	3240	1487	2423	3058	3667	4250
	90/70	802	1332	1474	2016	2358	1167	1916	2178	2855	3304	1449	2484	2752	3510	4086	1883	3073	3884	4664	5413
2000	75/65	706	1140	1294	1780	2060	1024	1650	1926	2518	2890	1270	2100	2406	3050	3600	1652	2692	3398	4074	4722
	90/70	891	1480	1638	2240	2620	1296	2129	2420	3173	3671	1610	2760	3058	3900	4540	2092	3414	4315	5182	6014
2200	75/65	777	1254	1423	1958	2266	1126	1814	2011	2769	3180	1397	2310	2647	3355	3960	1817	2961	3738	4481	5194
	90/70	980	1628	1801	2464	2882	1426	2341	2549	3490	4039	1771	3036	3363	4290	4994	2301	3755	4747	5700	6615
2400	75/65	847	1368	1553	2136	2472	1229	1979	2194	3021	3469	1524	2520	2887	3660	4320	1982	3230	4078	4889	5666
	90/70	1069	1776	1965	2688	3144	1555	2554	2781	3807	4406	1932	3312	3669	4680	5448	2510	4097	5178	6218	7217
2600	75/65	918	1482	1682	2314	2678	1331	2145	2504	3273	3758	1651	2730	3128	3965	4680	2148	3500	4417	5296	6139
	90/70	1158	1924	2129	2912	3406	1685	2767	3145	4124	4773	2093	3588	3975	5070	5902	2719	4438	5610	6737	7818
2800	75/65	988	1596	1812	2492	2884	1434	2310	2559	3525	4047	1778	2940	3368	4270	5040	2313	3769	4757	5704	6611
	90/70	1248	2072	2293	3136	3668	1815	2980	3244	4442	5140	2254	3864	4291	5460	6356	2929	4780	6042	7255	8420
3000	75/65	1059	1710	1941	2670	3090	1536	2475	2889	3777	4336	1905	3150	3609	4575	5400	2478	4038	5097	6111	7083
	90/70	1337	2220	2456	3360	3930	1944	3193	3629	4759	5507	2415	4140	4586	5850	6810	3138	5121	6473	7773	9021

Conversion Coefficient f for n=1.3

t1, °C	t2, °C	Room Air Temperature tnom, °C						
		10	12	15	18	20	22	24
95	80	0,57	0,59	0,62	0,65	0,68	0,70	0,73
	70	0,62	0,65	0,68	0,73	0,76	0,79	0,83
	60	0,69	0,72	0,77	0,83	0,87	0,91	0,96
	50	0,79	0,83	0,89	0,96	1,02	1,08	1,15
90	80	0,59	0,61	0,64	0,68	0,71	0,74	0,77
	75	0,62	0,64	0,68	0,72	0,75	0,78	0,82
	70	0,65	0,67	0,72	0,76	0,80	0,83	0,87
	65	0,68	0,71	0,76	0,81	0,85	0,89	0,93
	60	0,72	0,76	0,81	0,87	0,91	0,96	1,01
	55	0,77	0,81	0,87	0,93	0,98	1,04	1,10
	50	0,83	0,87	0,93	1,01	1,07	1,14	1,21
85	75	0,64	0,67	0,71	0,75	0,79	0,82	0,86
	70	0,68	0,70	0,75	0,80	0,84	0,88	0,92
	65	0,72	0,75	0,80	0,85	0,89	0,94	0,99
	60	0,76	0,79	0,85	0,91	0,96	1,01	1,07
	55	0,81	0,85	0,91	0,98	1,04	1,10	1,16
80	70	0,71	0,74	0,79	0,84	0,88	0,93	0,97
	65	0,75	0,78	0,84	0,90	0,94	0,99	1,05
	60	0,80	0,83	0,89	0,96	1,01	1,07	1,13
	55	0,85	0,89	0,96	1,04	1,10	1,16	1,24
	50	0,91	0,96	1,04	1,13	1,20	1,28	1,37
75	65	0,79	0,82	0,88	0,95	1,00	1,05	1,12
	60	0,84	0,88	0,94	1,02	1,08	1,14	1,21
	55	0,89	0,94	1,01	1,10	1,17	1,24	1,32
	50	0,96	1,01	1,10	1,20	1,28	1,37	1,47

t1, °C	t2, °C	Room Air Temperature tnom, °C						
		10	12	15	18	20	22	24
70	60	0,88	0,93	1,00	1,08	1,15	1,22	1,30
	55	0,94	0,99	1,08	1,17	1,25	1,33	1,42
	50	1,01	1,07	1,17	1,28	1,37	1,47	1,58
	45	1,10	1,16	1,28	1,42	1,52	1,64	1,79
65	55	1,00	1,05	1,15	1,26	1,34	1,43	1,54
	50	1,08	1,14	1,25	1,37	1,47	1,59	1,71
	45	1,17	1,24	1,37	1,52	1,64	1,78	1,94
	40	1,28	1,37	1,52	1,71	1,87	2,05	2,27
60	55	1,07	1,13	1,23	1,36	1,45	1,56	1,68
	50	1,15	1,22	1,34	1,48	1,60	1,73	1,87
	45	1,25	1,33	1,47	1,65	1,78	1,94	2,13
	40	1,37	1,47	1,64	1,86	2,03	2,24	2,50
55	50	1,23	1,31	1,45	1,62	1,75	1,90	2,07
	45	1,34	1,43	1,60	1,80	1,96	2,15	2,37
	40	1,47	1,59	1,78	2,03	2,24	2,48	2,78
	35	1,64	1,78	2,03	2,36	2,64	2,99	3,43
50	45	1,45	1,56	1,75	1,98	2,17	2,40	2,67
	40	1,60	1,73	1,96	2,25	2,50	2,79	3,15
	35	1,78	1,94	2,24	2,63	2,96	3,38	3,92
	30	2,03	2,24	2,64	3,20	3,70	4,39	5,39
45	40	1,75	1,90	2,17	2,53	2,83	3,19	3,66
	35	1,96	2,15	2,50	2,96	3,37	3,89	4,58
	30	2,24	2,48	2,96	3,63	4,25	5,11	6,38
40	35	2,17	2,40	2,83	3,41	3,93	4,62	5,54
	30	2,50	2,79	3,37	4,21	5,01	6,14	7,87

Recalculation of heat output for other operating conditions.
In the previous tables radiator heat output was determined according to the EN442 and DIN4704 standards which were established under standard conditions:

EN442
- water temperature at the inlet t1 = 75 °C
- water temperature at the outlet t2 = 65 °C
- room air temperature tnom = 20 °C

DIN4704
- water temperature at the inlet t1 = 90 °C
- water temperature at the outlet t2 = 70 °C
- room air temperature tnom = 20 °C

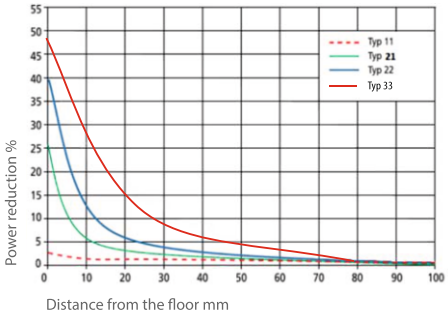
A recalculation is necessary when heating system conditions in question don't match those for which heat output is specified in the table. For this purpose we use the following formula: Q = Qc * f,
where Q is the required heat output under 75/65/20 (EN442) conditions;
Qc is heat loss from the room;
f is a conversion factor indicated in the table above.

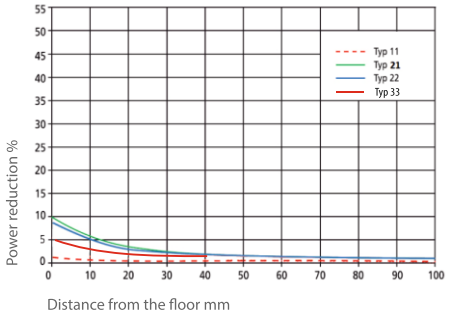
Example:
We need to choose a steel radiator RENS for the following conditions:
- 18 °C indoor air temperature;
- 1253 W heat loss;
- parameters of the future heating system - 65/45 °C.

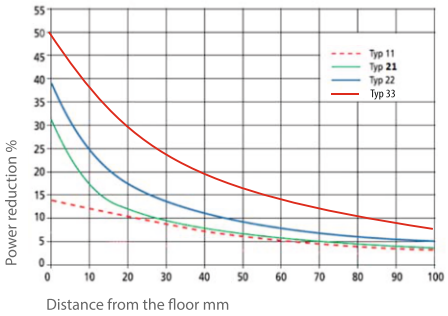
First, we find the conversion factor for these parameters - f = 1.52.
Q= 1253 * 1.52 = 1904.56 W
Afterwards, we look at the heat output tables from pages 14 and 15 and select the nearest types:
Type 22 500 * 1300 mm
Type 22 600 * 1100 mm

Reduced heat output

Reduction of steel radiator heat output also depends on specific installation features: distance from the floor and wall, niche size. In such cases, radiator heat output should be adjusted according to the graphs below.







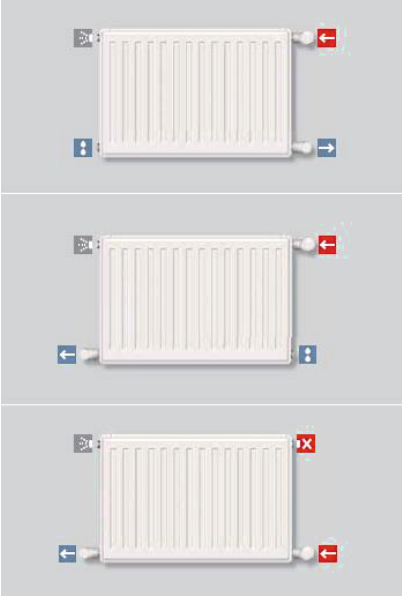
Ease of Connection

The way panel radiators RENS are connected to the piping also affects heat output.
Depending on the type of piping shown in the images below, you'll have to take the corresponding correction into account.

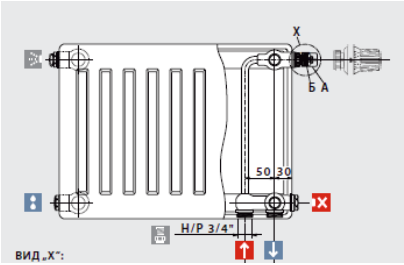
Top bottom same end connection.
With this connection method there is no decrease in radiator heat output. It is most commonly advised for use.

Top bottom opposite end connection.
This method is advised when dealing with long radiators (devices with length 3 times their height).

Bottom opposite end connection.
With this connection method the output decreases by 10-20%.



For devices with bottom connection.
Radiator water inlet is on the left, the outlet is on the right.



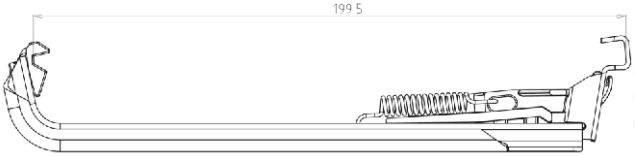
Kv, m3/h for devices with side connection

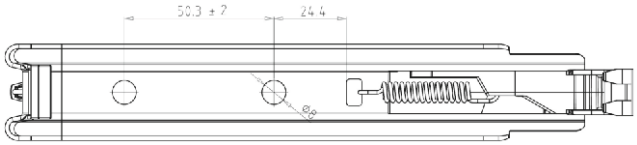
Height	Type 11	Type 21	Type 22	Type 33
200	2,5	3,1	3,1	3,1
300	2,5	3,1	3,1	3,1
400	2,5	3,1	3,1	3,1
500	2,5	3,1	3,1	3,1
600	2,5	3,1	3,1	3,1

Radiators with bottom connection.
The package of radiators with bottom connection from Rens does not include a thermostatic valve. It is installed on the upper right outlet. It provides automatic regulation of the device's heat output. A thermostatic head is mounted on it.
Valve type - with pre-setting. This valve design allows for hydraulic balancing of the heating system.

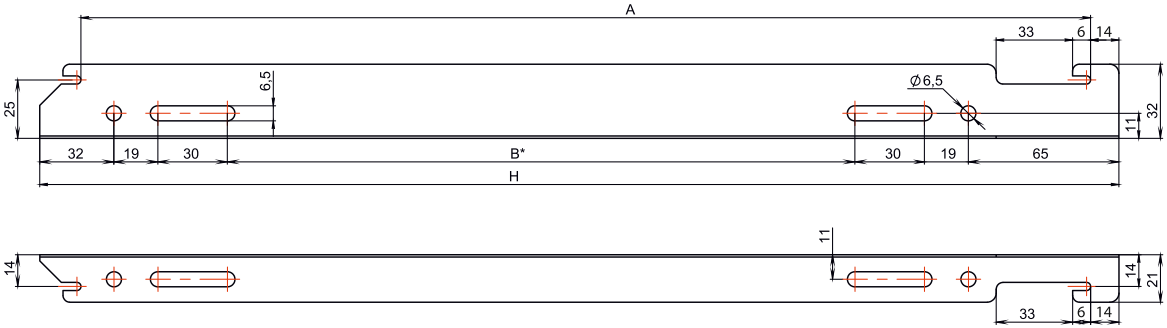
	Degree of pre-setting					
	1	2	3	4	5	6
Kv (м3/год)	0,025... 0,047	0,047... 0,126	0,126... 0,269	0,269... 0,417	0,417... 0,600	0,600... 0,840

Height 200





Height	H	A	B
300	166	136	-
400	266	236	71
500	366	336	171
600	466	436	271



Thermostatic heads compatible with steel radiators RENS

Thermoinserts for installation on Ventil Compact radiator Rens, thermostatic heads with connection thread M30*1.5 are suitable. You can use models from the following manufacturers:

Danfoss - RAE-K 5034

Giacomini - R460H

Heimeier - Тип K

Herz - 1 9200 38

Honeywell - Thera 4 D

Oventrop - Uni LH

Valtec - VT.3000.0

ICMA - 989

RADIATORS ARE PRESENTED IN THREE COLOR SOLUTIONS:

SILVER, WHITE, GRAPHITE

RENS

STEEL RADIATOR