

Floor convector

Technical
Catalogue



General

All measurements of floor convectors for heating and cooling are performed in conformance with European directives and European standards, which prescribes operation and usage of heating and cooling devices.

Heating characteristics of floor convectors for heating (TK-13, TKV-13, TK-S-13, TKV-S-13) have been measured according to european standard EN 442, which precisely prescribes process of definition of nominal Heating capacity by temperature conditions 75 °C, 65 °C, 20 °C.

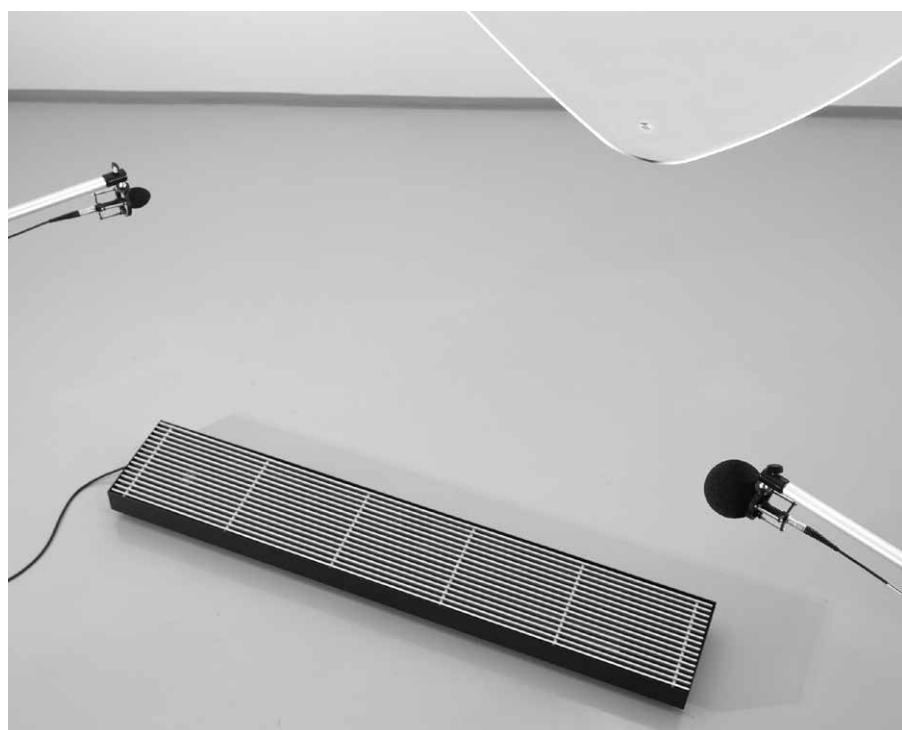
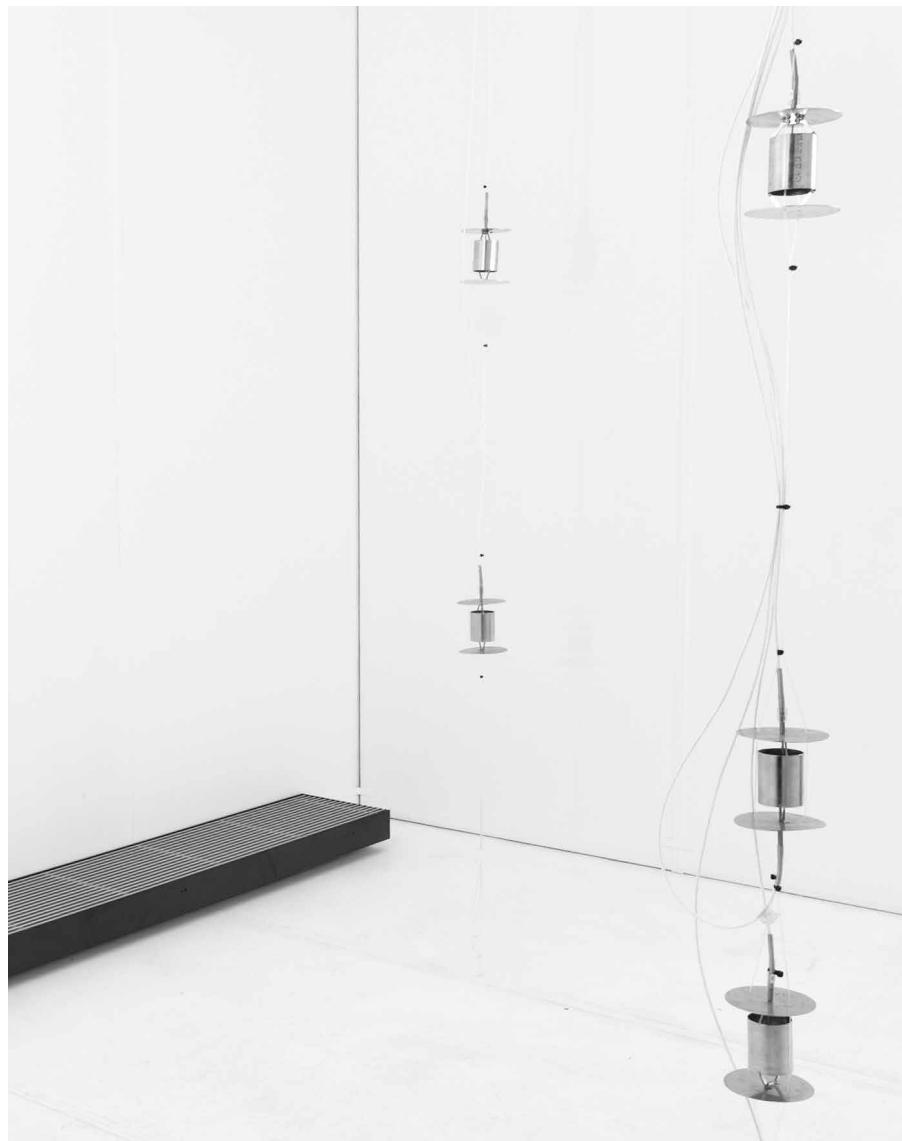
Laboratory for heat exchangers at Lindab Institute Klima with certified measurement equipment is the sixth suchlike in Europe for measurements of heating characteristics of heating devices and it has to provide repeatability and reparability.

Heating and cooling characteristics of floor convectors for heating and cooling (TKH-13, with roll-up grille) have been measured according to EUROVENT standard 6/3 under the following conditions:

2-pipe systems:
cooling 7 °C / 12 °C / 27 °C / 47 % RH,
heating 50 °C / 20 °C, water flow equal to water flow at cooling

4-pipe systems:
cooling 7 °C / 12 °C / 27 °C / 47 % RH,
heating 70 °C / 60 °C / 20 °C.

Sound power level L_{WA} (dB), A weighted according to IEC 61672 and calculated in accordance with the recommendation of the EN ISO 3741 standard. Sound pressure level L_{pA} (dB), A weighted at certain distance in specific room can be calculated from sound power level data of device.



Benefits

In rooms with large glazing envelope surfaces or cold envelope walls, it is difficult to establish comfortable heating by means of conventional heating bodies only. Temperature differences between the glass surfaces and bulk air temperature lead to cooling of air in the boundary layer along the wall and in turn, to its downwards flow and spreading across the entire room floor area, the result being occupants' discomfort. Especially when outside temperatures drop below 10 °C, it is virtually impossible to maintain occupational comfort in rooms with large surface windows unless auxiliary floor convector heating is used. Floor convectors further prevent condensation build-up on glass, as they maintain a layer of warm humid air adjacent to the glass surfaces. Floor convectors (in particular the forced convection types) also prevent inlet of cold outside air.

Functions

- Room heating (primary or secondary heating),
- Maintenance of uniform air circulation field in the room, and thereby, uniform distribution of heat throughout the room,
- Increasing of cold areas surface temperature,
- Prevention of condensation build-up on glass surfaces,
- Prevention of ingress of cold outside air through big glass surfaces,
- Room cooling (TKH-13 models),
- Heating of areas with increased humidity (TK-S-13, TKV-S-13).

Characteristics

- High quality of material and production,
- High heating and cooling capacities,
- Good sound characteristics,
- Small water content in the heat exchanger and fast heating/cooling of the room,
- Installation into the floor, hence no occupation of the space,
- Installation in humid areas (TK-S-13 and TKV-S-13 models),
- Wide range of control accessories,
- Much flexibility to the needs of the project with specific versions (corner designs, rounded contours, variety of tread-on grilles),
- Easy installation, operation and maintenance.

Pressure and temperature limitation of heat exchanger

- Maximal operating pressure: 11 bar.
- Maximal allowed pressure: 16 bar.
- Maximal water temperature: 110 °C.



Samples of heat exchangers have been tested by an accredited test laboratory.

Cooling and heating floor convectors TKH-13

Application

Cooling and heating floor convectors are designed for secondary cooling in the period of cooling demand, in some cases for primary room cooling. Their operation is the most efficient, when they are installed close to the heat source (solar radiation through windows...), to prevent room temperature raising. They are suitable for all rooms with large hot envelope surfaces (large windows, glazing, etc., ...). They are applied in buildings in which, due to the construction characteristics, ceiling cooling is not feasible. During the heating season, the convectors can be applied for room heating, similar way to TKV-13 type.

Operation

In the cooling mode, the TKH-13 floor convector draws in warm air from the areas around windows and hot walls, cools it in the heat exchanger, and feeds it back into the room. An insulated condensation collection tray is installed under the heat exchanger to collect and drain the condensate generated during the cooling of the air. In the heating mode, the process is inverted: the TKH draws in cold air from the window areas, heats it and feeds back into the room.

TKH-13 components (basic design)

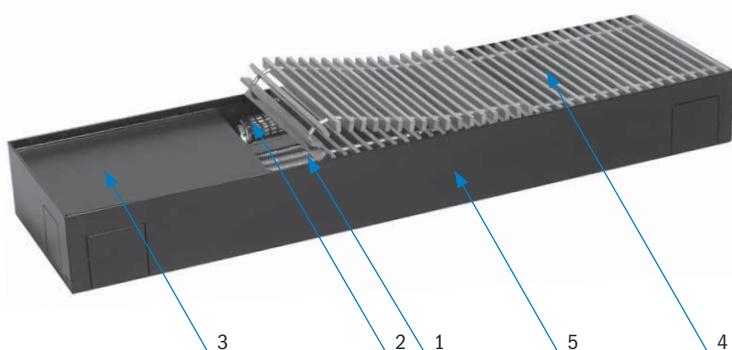
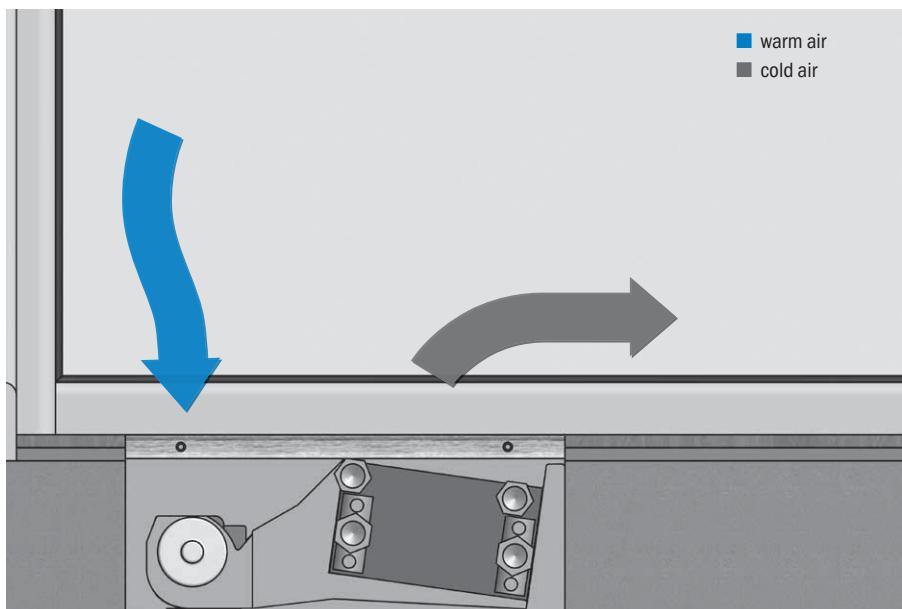
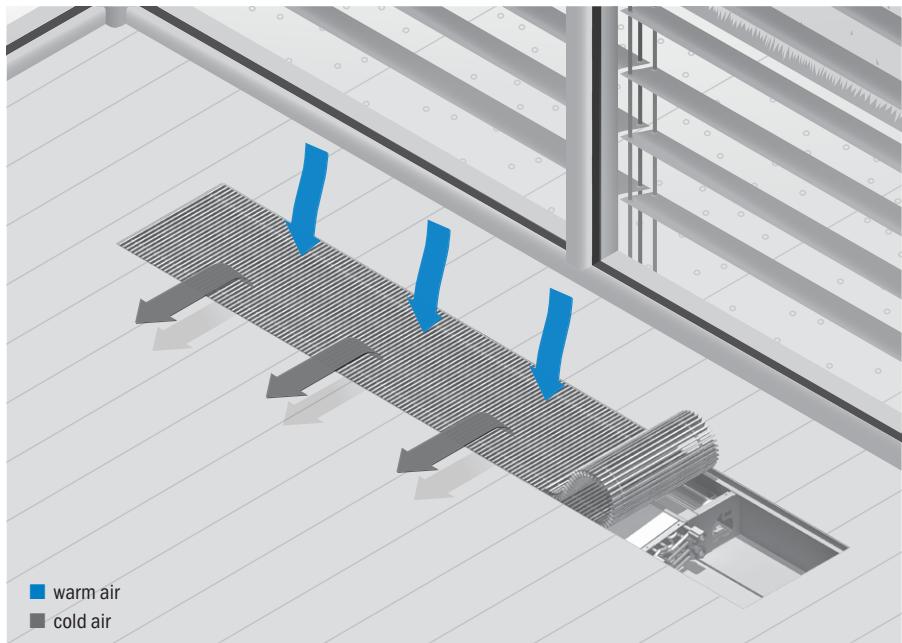
1. Heat exchanger,
2. Tangential fan,
3. Electric connection socket,
4. Tread-on grille,
5. Housing,
6. Condensation collection tray.

Types

Six TKH-13 models for 2-pipe systems and twelve TKH-13 models for 4-pipe systems are available.

Control accessories

The range of accessories equals to the one for TKV-13. Special designs of control accessories can be supplied on request.



■ Technical data

TKH-13 Lx34x14/2C/45

Cooling

Housing length L [mm]	Fan speed		Temperature regime									
			7/12			8/14			14/18			
	AC	EC	T _w	T _a [°C]	24	26	27	24	26	27	24	26
1250	MAX	100%	Q _{c,t} [W]	1111	1308	1407	931	1150	1246	499	638	725
			Q _{c,s} [W]	927	1065	1135	814	948	1016	499	632	700
		70%	m _w [kg/h]	190	224	241	133	164	178	107	137	155
			Δp _w [kPa]	0,65	0,84	0,94	0,38	0,52	0,58	0,28	0,39	0,48
	MED	50%	Q _{c,t} [W]	957	1127	1213	791	991	1074	404	521	599
			Q _{c,s} [W]	750	862	919	659	768	823	404	512	567
		50%	m _w [kg/h]	164	193	208	113	142	153	87	112	128
			Δp _w [kPa]	0,52	0,66	0,74	0,30	0,41	0,47	0,21	0,29	0,36
	MIN	50%	Q _{c,t} [W]	737	867	933	604	762	826	299	388	450
			Q _{c,s} [W]	556	639	681	489	569	610	299	379	420
		50%	m _w [kg/h]	126	149	160	86	109	118	64	83	96
			Δp _w [kPa]	0,35	0,45	0,50	0,21	0,28	0,32	0,14	0,20	0,24
2000	MAX	100%	Q _{c,t} [W]	2114	2488	2678	1774	2187	2370	957	1223	1387
			Q _{c,s} [W]	1777	2043	2177	1562	1819	1949	957	1213	1343
		70%	m _w [kg/h]	362	427	459	254	313	339	205	262	297
			Δp _w [kPa]	2,65	3,50	3,97	1,47	2,06	2,36	1,05	1,55	1,90
	MED	70%	Q _{c,t} [W]	1662	1957	2106	1376	1720	1864	707	910	1045
			Q _{c,s} [W]	1313	1509	1608	1154	1344	1440	707	896	992
		50%	m _w [kg/h]	285	336	361	197	246	266	151	195	224
			Δp _w [kPa]	1,77	2,32	2,63	0,98	1,39	1,59	0,66	0,97	1,20
	MIN	50%	Q _{c,t} [W]	1428	1681	1808	1171	1478	1601	580	752	872
			Q _{c,s} [W]	1078	1239	1320	947	1103	1182	580	735	814
		50%	m _w [kg/h]	245	288	310	167	211	229	124	161	187
			Δp _w [kPa]	1,39	1,81	2,04	0,77	1,10	1,24	0,49	0,72	0,91
2750	MAX	100%	Q _{c,t} [W]	3072	3615	3890	2578	3178	3443	1390	1777	2016
			Q _{c,s} [W]	2582	2968	3163	2269	2643	2832	1390	1762	1951
		70%	m _w [kg/h]	527	620	667	368	454	492	298	381	432
			Δp _w [kPa]	6,66	8,90	10,16	3,58	5,14	5,91	2,51	3,79	4,71
	MED	70%	Q _{c,t} [W]	2451	2886	3106	2029	2536	2749	1042	1342	1542
			Q _{c,s} [W]	1936	2225	2371	1701	1981	2123	1042	1321	1463
		50%	m _w [kg/h]	420	495	533	290	362	393	223	288	330
			Δp _w [kPa]	4,49	5,97	6,79	2,40	3,49	4,00	1,58	2,37	2,98
	MIN	50%	Q _{c,t} [W]	2269	2671	2874	1864	2348	2544	928	1202	1393
			Q _{c,s} [W]	1725	1983	2113	1516	1766	1892	928	1177	1303
		50%	m _w [kg/h]	389	458	493	266	335	363	199	258	298
			Δp _w [kPa]	3,93	5,21	5,92	2,09	3,06	3,50	1,32	1,98	2,52

Heating

Housing length L [mm]	Fan speed		Temperature regime						
			T _w	T _a [°C]	75/65	70/55	55/45		
	AC	EC	20	20	20	20	20		
1250	MAX	100%	Q _h [W]	3159	2580	1827			
			m _w [kg/h]	271	147	157			
		70%	Δp _w [kPa]	1,01	0,39	0,43			
			Q _h [W]	2120	1731	1226			
	MED	70%	m _w [kg/h]	182	99	105			
			Δp _w [kPa]	0,54	0,22	0,24			
		50%	Q _h [W]	1516	1238	877			
			m _w [kg/h]	130	71	75			
	MIN	50%	Δp _w [kPa]	0,33	0,14	0,15			
			Q _h [W]	6266	5117	3624			
		50%	m _w [kg/h]	537	292	311			
			Δp _w [kPa]	4,66	1,65	1,82			
2000	MAX	100%	Q _h [W]	4201	3430	2430			
			m _w [kg/h]	360	196	208			
		70%	Δp _w [kPa]	2,33	0,87	0,95			
			Q _h [W]	3064	2502	1772			
	MED	50%	m _w [kg/h]	263	143	152			
			Δp _w [kPa]	1,38	0,54	0,59			
		50%	Q _h [W]	9326	7616	5394			
			m _w [kg/h]	799	435	462			
2750	MAX	100%	Δp _w [kPa]	12,57	4,25	4,72			
			Q _h [W]	6260	5112	3621			
		70%	m _w [kg/h]	537	292	310			
			Δp _w [kPa]	6,13	2,17	2,39			
	MED	50%	Q _h [W]	4467	3648	2584			
			m _w [kg/h]	383	208	221			
		50%	Δp _w [kPa]	3,41	1,26	1,38			

Definition of symbols

AC	AC 230 V fan
EC	DC 24 V fan, electronically commutated. Models with EC fans available on request only.
Q_{c,t} [W]	Total cooling capacity at 50 % relative air humidity
Q_{c,s} [W]	Sensible cooling capacity
Q_h [W]	Heating capacity
m_w [kg/h]	Water flow
Δp_w [kPa]	Pressure drop on the waterside
T_w [°C]	Water temperature
T_a [°C]	Air temperature

TKH-13 Lx34x14/2C/60**Cooling**

Housing length L [mm]	Fan speed	Temperature regime									
		7/12			8/14			14/18			
AC	T _w [°C]	T _a [°C]	24	26	27	24	26	27	24	26	27
1250	MAX	Q _{c,t} [W]	1457	1714	1845	1223	1507	1633	659	843	956
		Q _{c,s} [W]	1225	1407	1500	1076	1253	1343	659	836	925
		m̄ _w [kg/h]	250	294	316	175	215	233	141	181	205
	MED	Δp _w [kPa]	0,99	1,30	1,46	0,57	0,78	0,89	0,41	0,60	0,73
		Q _{c,t} [W]	1352	1592	1713	1120	1399	1516	575	740	850
		Q _{c,s} [W]	1068	1227	1308	938	1093	1171	575	729	807
2000	MAX	m̄ _w [kg/h]	232	273	294	160	200	217	123	159	182
		Δp _w [kPa]	0,88	1,15	1,29	0,50	0,70	0,79	0,34	0,49	0,61
		Q _{c,t} [W]	1098	1292	1390	899	1136	1231	442	574	667
	MED	Q _{c,s} [W]	822	945	1007	722	841	902	442	561	621
		m̄ _w [kg/h]	188	221	238	128	162	176	95	123	143
		Δp _w [kPa]	0,64	0,82	0,92	0,36	0,51	0,57	0,23	0,34	0,42
2750	MAX	Q _{c,t} [W]	2857	3361	3617	2402	2955	3202	1303	1665	1885
		Q _{c,s} [W]	2420	2782	2965	2127	2477	2655	1303	1652	1829
		m̄ _w [kg/h]	490	576	620	343	422	457	279	357	404
	MED	Δp _w [kPa]	4,45	5,93	6,76	2,41	3,44	3,95	1,71	2,58	3,19
		Q _{c,t} [W]	2523	2971	3198	2093	2611	2830	1081	1391	1595
		Q _{c,s} [W]	2008	2308	2460	1765	2055	2202	1081	1370	1518
3500	MAX	m̄ _w [kg/h]	433	509	548	299	373	404	232	298	342
		Δp _w [kPa]	3,58	4,77	5,43	1,92	2,78	3,19	1,27	1,91	2,40
		Q _{c,t} [W]	2317	2726	2933	1900	2397	2597	941	1220	1415
	MED	Q _{c,s} [W]	1748	2009	2141	1536	1789	1917	941	1193	1321
		m̄ _w [kg/h]	397	467	503	271	342	371	202	261	303
		Δp _w [kPa]	3,09	4,10	4,66	1,64	2,41	2,75	1,02	1,54	1,96
4300	MAX	Q _{c,t} [W]	3655	4302	4630	3062	3782	4098	1641	2100	2385
		Q _{c,s} [W]	3048	3504	3734	2679	3120	3343	1641	2080	2303
		m̄ _w [kg/h]	627	738	794	438	540	585	352	450	511
	MED	Δp _w [kPa]	9,08	12,19	13,95	4,81	6,97	8,04	3,31	5,06	6,32
		Q _{c,t} [W]	3195	3762	4050	2650	3307	3584	1369	1761	2020
		Q _{c,s} [W]	2543	2923	3115	2235	2603	2789	1369	1735	1922
5000	MIN	m̄ _w [kg/h]	548	645	694	379	472	512	293	377	433
		Δp _w [kPa]	7,14	9,57	10,92	3,76	5,50	6,34	2,45	3,74	4,73
		Q _{c,t} [W]	2736	3220	3465	2244	2832	3068	1111	1441	1671
	MAX	Q _{c,s} [W]	2065	2373	2529	1814	2113	2264	1111	1409	1560
		m̄ _w [kg/h]	469	552	594	321	405	438	238	309	358
		Δp _w [kPa]	5,44	7,24	8,25	2,84	4,21	4,83	1,75	2,67	3,42

Heating

Housing length L [mm]	Fan speed	Temperature regime				
		T _w [°C]	T _a [°C]	75/65	70/55	55/45
AC	20	20	20	20	20	20
1250	MAX	Q _h [W]	4541	3708	2626	
		m̄ _w [kg/h]	389	212	225	
		Δp _w [kPa]	1,85	0,68	0,75	
	MED	Q _h [W]	3283	2681	1899	
		m̄ _w [kg/h]	281	153	163	
		Δp _w [kPa]	1,07	0,41	0,45	
2000	MAX	Q _h [W]	2552	2084	1476	
		m̄ _w [kg/h]	219	119	127	
		Δp _w [kPa]	0,72	0,29	0,31	
	MED	Q _h [W]	9131	7456	5281	
		m̄ _w [kg/h]	783	426	453	
		Δp _w [kPa]	9,18	3,11	3,45	
2750	MIN	Q _h [W]	6507	5314	3763	
		m̄ _w [kg/h]	558	304	323	
		Δp _w [kPa]	4,98	1,75	1,94	
	MAX	Q _h [W]	4861	3969	2811	
		m̄ _w [kg/h]	417	227	241	
		Δp _w [kPa]	2,99	1,09	1,20	
3500	MAX	Q _h [W]	13743	11222	7949	
		m̄ _w [kg/h]	1178	641	681	
		Δp _w [kPa]	25,84	8,42	9,40	
	MED	Q _h [W]	9731	7946	5628	
		m̄ _w [kg/h]	834	454	482	
		Δp _w [kPa]	13,60	4,57	5,08	
4300	MIN	Q _h [W]	8134	6642	4704	
		m̄ _w [kg/h]	697	380	403	
		Δp _w [kPa]	9,80	3,36	3,72	

Definition of symbols

AC	AC 230 V fan
Q_{c,t} [W]	Total cooling capacity at 50 % relative air humidity
Q_{c,s} [W]	Sensible cooling capacity
Q_h [W]	Heating capacity
m̄_w [kg/h]	Water flow
Δp_w [kPa]	Pressure drop on the waterside
T_w [°C]	Water temperature
T_a [°C]	Air temperature

TKH-13 Lx34x14/4C/45

Cooling

Housing length L [mm]	Fan speed		Temperature regime										
	AC	EC	T _w	[°C]	7/12			8/14			14/18		
			T _a	[°C]	24	26	27	24	26	27	24	26	27
1250	MAX	100%	Q _{c,t}	[W]	898	1057	1137	752	929	1006	403	516	586
			Q _{c,s}	[W]	749	860	917	658	766	821	403	511	566
			m _w	[kg/h]	154	181	195	107	133	144	86	111	126
	MED	70%	Δp _w	[kPa]	0,38	0,49	0,55	0,22	0,30	0,34	0,16	0,23	0,28
			Q _{c,t}	[W]	756	890	958	627	782	848	324	417	478
			Q _{c,s}	[W]	602	692	737	529	616	660	324	411	455
	MIN	50%	m̄ _w	[kg/h]	130	153	164	90	112	121	69	89	102
			Δp _w	[kPa]	0,29	0,37	0,42	0,17	0,23	0,26	0,12	0,17	0,20
			Q _{c,t}	[W]	571	672	724	469	591	641	234	303	351
2000	MAX	100%	Q _{c,s}	[W]	434	499	532	382	445	476	234	296	328
			m _w	[kg/h]	98	115	124	67	85	92	50	65	75
			Δp _w	[kPa]	0,19	0,24	0,27	0,11	0,15	0,17	0,08	0,11	0,13
	MED	70%	Q _{c,t}	[W]	1753	2063	2221	1469	1814	1966	787	1007	1144
			Q _{c,s}	[W]	1462	1681	1791	1285	1496	1603	787	998	1105
			m _w	[kg/h]	301	354	381	210	259	281	169	216	245
	MIN	50%	Δp _w	[kPa]	1,45	1,92	2,19	0,79	1,12	1,29	0,55	0,83	1,02
			Q _{c,t}	[W]	1465	1725	1856	1213	1516	1643	623	802	921
			Q _{c,s}	[W]	1157	1330	1417	1017	1184	1269	623	789	874
2750	MAX	100%	m _w	[kg/h]	251	296	318	173	217	235	133	172	197
			Δp _w	[kPa]	1,06	1,41	1,60	0,58	0,83	0,95	0,38	0,57	0,71
			Q _{c,t}	[W]	1175	1383	1488	964	1216	1317	477	619	718
	MED	70%	Q _{c,s}	[W]	887	1019	1086	779	907	972	477	605	670
			m _w	[kg/h]	201	237	255	138	174	188	102	133	154
			Δp _w	[kPa]	0,74	0,97	1,09	0,40	0,58	0,66	0,26	0,38	0,48
	MIN	50%	Q _{c,t}	[W]	2523	2970	3197	2114	2611	2829	1133	1450	1647
			Q _{c,s}	[W]	2105	2419	2578	1850	2154	2308	1133	1436	1590
			m _w	[kg/h]	433	509	548	302	373	404	243	311	353
3000	MAX	100%	Δp _w	[kPa]	3,35	4,50	5,14	1,78	2,57	2,96	1,22	1,87	2,33
			Q _{c,t}	[W]	1894	2230	2400	1568	1960	2124	805	1037	1191
			Q _{c,s}	[W]	1496	1719	1832	1314	1531	1640	805	1021	1130
	MED	70%	m _w	[kg/h]	325	382	411	224	280	303	173	222	255
			Δp _w	[kPa]	2,01	2,69	3,06	1,07	1,56	1,79	0,70	1,06	1,33
			Q _{c,t}	[W]	1628	1916	2062	1335	1685	1826	661	857	995
	MIN	50%	Q _{c,s}	[W]	1229	1412	1505	1080	1258	1347	661	838	928
			m _w	[kg/h]	279	329	354	191	241	261	142	184	213
			Δp _w	[kPa]	1,55	2,06	2,34	0,82	1,21	1,38	0,51	0,77	0,98

Heating

Housing length L [mm]	Fan speed		Temperature regime				
	AC	EC	T _w	[°C]	75/65	70/55	55/45
			T _a	[°C]	20	20	20
1250	MAX	100%	Q _h	[W]	1496	1222	865
			m̄ _w	[kg/h]	128	70	74
			Δp _w	[kPa]	0,93	0,36	0,40
	MED	70%	Q _h	[W]	1042	851	603
			m̄ _w	[kg/h]	89	49	52
			Δp _w	[kPa]	0,52	0,22	0,24
	MIN	50%	Q _h	[W]	674	550	390
			m̄ _w	[kg/h]	58	32	33
			Δp _w	[kPa]	0,28	0,12	0,13
2000	MAX	100%	Q _h	[W]	3185	2601	1842
			m̄ _w	[kg/h]	273	149	158
			Δp _w	[kPa]	5,80	2,05	2,26
	MED	70%	Q _h	[W]	2016	1646	1166
			m̄ _w	[kg/h]	173	94	100
			Δp _w	[kPa]	2,63	0,99	1,08
	MIN	50%	Q _h	[W]	1457	1190	843
			m̄ _w	[kg/h]	125	68	72
			Δp _w	[kPa]	1,54	0,61	0,66
2750	MAX	100%	Q _h	[W]	5085	4152	2941
			m̄ _w	[kg/h]	436	237	252
			Δp _w	[kPa]	19,49	6,53	7,26
	MED	70%	Q _h	[W]	2994	2445	1732
			m̄ _w	[kg/h]	257	140	148
			Δp _w	[kPa]	7,49	2,66	2,94
	MIN	50%	Q _h	[W]	2146	1752	1241
			m̄ _w	[kg/h]	184	100	106
			Δp _w	[kPa]	4,21	1,56	1,72

Definition of symbols

AC	AC 230 V fan
EC	DC 24 V fan, electronically commutated. Models with EC fans available on request only.
Q_{c,t} [W]	Total cooling capacity at 50 % relative air humidity
Q_{c,s} [W]	Sensible cooling capacity
Q_h [W]	Heating capacity
m̄_w [kg/h]	Water flow
Δp_w [kPa]	Pressure drop on the waterside
T_w [°C]	Water temperature
T_a [°C]	Air temperature

TKH-13 Lx40x14/4C/45**Cooling**

Housing length L [mm]	Fan speed		Temperature regime										
	AC	EC	T _w	[°C]	7/12			8/14			14/18		
			T _a	[°C]	24	26	27	24	26	27	24	26	27
1250	MAX	100%	Q _{c,t}	[W]	1020	1201	1292	855	1055	1144	458	586	666
			Q _{c,s}	[W]	851	978	1042	748	871	933	458	580	643
			m _w	[kg/h]	175	206	222	122	151	163	98	126	143
	MED	70%	Δp _w	[kPa]	0,54	0,70	0,79	0,31	0,42	0,48	0,22	0,32	0,39
			Q _{c,t}	[W]	860	1012	1089	713	890	964	368	474	543
			Q _{c,s}	[W]	684	786	838	601	700	750	368	467	517
	MIN	50%	m̄ _w	[kg/h]	147	174	187	102	127	138	79	102	116
			Δp _w	[kPa]	0,41	0,53	0,60	0,23	0,33	0,37	0,16	0,23	0,28
			Q _{c,t}	[W]	649	763	821	533	671	727	265	344	398
2000	MAX	100%	Q _{c,s}	[W]	493	567	604	433	505	541	265	336	373
			m _w	[kg/h]	111	131	141	76	96	104	57	74	85
			Δp _w	[kPa]	0,27	0,34	0,38	0,15	0,21	0,24	0,10	0,15	0,18
	MED	70%	Q _{c,t}	[W]	2019	2377	2558	1692	2089	2264	906	1160	1318
			Q _{c,s}	[W]	1684	1936	2063	1480	1724	1847	906	1149	1273
			m̄ _w	[kg/h]	346	408	439	242	299	323	194	249	282
	MIN	50%	Δp _w	[kPa]	2,15	2,86	3,27	1,16	1,66	1,91	0,80	1,21	1,51
			Q _{c,t}	[W]	1668	1965	2114	1381	1727	1871	709	914	1049
			Q _{c,s}	[W]	1318	1514	1614	1158	1349	1445	709	899	996
2750	MAX	100%	m _w	[kg/h]	286	337	363	197	247	267	152	196	225
			Δp _w	[kPa]	1,54	2,04	2,33	0,83	1,20	1,37	0,54	0,82	1,02
			Q _{c,t}	[W]	1354	1593	1714	1110	1401	1517	550	713	827
	MED	70%	Q _{c,s}	[W]	1021	1174	1251	898	1045	1120	550	697	772
			m _w	[kg/h]	232	273	294	159	200	217	118	153	177
			Δp _w	[kPa]	1,08	1,42	1,61	0,58	0,84	0,96	0,37	0,55	0,69
	MIN	50%	Q _{c,t}	[W]	2786	3279	3529	2334	2882	3123	1250	1600	1818
			Q _{c,s}	[W]	2323	2670	2846	2042	2378	2548	1250	1585	1756
			m _w	[kg/h]	478	562	605	333	412	446	268	343	390
3000	MAX	100%	Δp _w	[kPa]	4,63	6,23	7,13	2,44	3,55	4,10	1,67	2,57	3,21
			Q _{c,t}	[W]	2074	2442	2629	1720	2146	2326	888	1143	1311
			Q _{c,s}	[W]	1651	1897	2022	1451	1690	1810	888	1126	1247
	MED	70%	m _w	[kg/h]	356	419	451	246	307	332	190	245	281
			Δp _w	[kPa]	2,73	3,65	4,17	1,45	2,11	2,43	0,95	1,44	1,82
			Q _{c,t}	[W]	1784	2099	2259	1465	1846	2000	730	945	1095
	MIN	50%	Q _{c,s}	[W]	1356	1559	1661	1192	1388	1487	730	925	1025
			m _w	[kg/h]	306	360	387	209	264	286	156	203	235
			Δp _w	[kPa]	2,10	2,79	3,18	1,11	1,63	1,87	0,69	1,05	1,34

Heating

Housing length L [mm]	Fan speed		Temperature regime				
	AC	EC	T _w	[°C]	75/65	70/55	55/45
			T _a	[°C]	20	20	20
1250	MAX	100%	Q _h	[W]	2301	1879	1331
			m̄ _w	[kg/h]	197	107	114
			Δp _w	[kPa]	2,14	0,79	0,87
	MED	70%	Q _h	[W]	1555	1270	899
			m̄ _w	[kg/h]	133	73	77
			Δp _w	[kPa]	1,11	0,43	0,47
	MIN	50%	Q _h	[W]	1073	876	621
			m̄ _w	[kg/h]	92	50	53
			Δp _w	[kPa]	0,62	0,25	0,28
2000	MAX	100%	Q _h	[W]	4519	3690	2614
			m̄ _w	[kg/h]	387	211	224
			Δp _w	[kPa]	12,30	4,17	4,63
	MED	70%	Q _h	[W]	3054	2494	1766
			m̄ _w	[kg/h]	262	143	151
			Δp _w	[kPa]	6,08	2,15	2,38
	MIN	50%	Q _h	[W]	2227	1819	1288
			m̄ _w	[kg/h]	191	104	110
			Δp _w	[kPa]	3,51	1,30	1,43
2750	MAX	100%	Q _h	[W]	6780	5536	3921
			m̄ _w	[kg/h]	581	316	336
			Δp _w	[kPa]	37,60	12,27	13,69
	MED	70%	Q _h	[W]	4551	3716	2632
			m̄ _w	[kg/h]	390	212	226
			Δp _w	[kPa]	17,95	6,08	6,75
	MIN	50%	Q _h	[W]	3250	2654	1880
			m̄ _w	[kg/h]	279	152	161
			Δp _w	[kPa]	9,78	3,44	3,80

Definition of symbols

AC	AC 230 V fan
EC	DC 24 V fan, electronically commutated. Models with EC fans available on request only.
Q_{c,t} [W]	Total cooling capacity at 50 % relative air humidity
Q_{c,s} [W]	Sensible cooling capacity
Q_h [W]	Heating capacity
m̄_w [kg/h]	Water flow
Δp_w [kPa]	Pressure drop on the waterside
T_w [°C]	Water temperature
T_a [°C]	Air temperature

TKH-13 Lx34x14/4C/60

Cooling

Housing length L [mm]	Fan speed	Temperature regime												
		7/12			8/14			14/18						
AC	T _w [°C]	T _a [°C]	24	26	27	24	26	27	24	26	27	24	26	27
1250	MAX	Q _{c,t} [W]	1247	1468	1580	1045	1290	1398	560	716	814			
		Q _{c,s} [W]	1040	1195	1274	914	1065	1141	560	710	786			
		m̄ _w [kg/h]	214	252	271	149	184	200	120	154	174			
	MED	Δp _w [kPa]	0,64	0,85	0,96	0,36	0,51	0,58	0,26	0,38	0,46			
		Q _{c,t} [W]	1051	1238	1333	872	1088	1179	450	580	665			
		Q _{c,s} [W]	837	962	1025	735	856	918	450	571	632			
2000	MAX	m̄ _w [kg/h]	180	212	228	125	155	169	97	124	142			
		Δp _w [kPa]	0,49	0,64	0,72	0,27	0,38	0,44	0,19	0,27	0,34			
		Q _{c,t} [W]	794	934	1005	652	821	890	325	421	487			
	MED	Q _{c,s} [W]	603	693	739	530	617	662	325	412	456			
		m̄ _w [kg/h]	136	160	172	93	117	127	70	90	104			
		Δp _w [kPa]	0,31	0,40	0,45	0,18	0,25	0,28	0,12	0,17	0,21			
2750	MAX	Q _{c,t} [W]	2389	2812	3027	2002	2472	2679	1073	1373	1559			
		Q _{c,s} [W]	1993	2290	2441	1751	2040	2185	1073	1360	1506			
		m̄ _w [kg/h]	410	482	519	286	353	383	230	294	334			
	MED	Δp _w [kPa]	2,49	3,34	3,82	1,33	1,92	2,21	0,92	1,39	1,74			
		Q _{c,t} [W]	1997	2352	2531	1654	2067	2240	849	1093	1256			
		Q _{c,s} [W]	1577	1813	1932	1386	1614	1730	849	1076	1192			
	MIN	m̄ _w [kg/h]	342	403	434	236	295	320	182	234	269			
		Δp _w [kPa]	1,82	2,42	2,77	0,96	1,40	1,61	0,62	0,95	1,20			
		Q _{c,t} [W]	1601	1885	2028	1313	1657	1795	650	843	978			
	MIN	Q _{c,s} [W]	1208	1389	1480	1062	1237	1325	650	824	913			
		m̄ _w [kg/h]	275	323	348	188	237	257	139	181	210			
		Δp _w [kPa]	1,24	1,64	1,87	0,66	0,96	1,10	0,41	0,62	0,79			
2750	MAX	Q _{c,t} [W]	3282	3863	4158	2750	3396	3680	1473	1886	2142			
		Q _{c,s} [W]	2737	3146	3353	2406	2802	3002	1473	1868	2068			
		m̄ _w [kg/h]	563	662	713	393	485	526	316	404	459			
	MED	Δp _w [kPa]	5,39	7,29	8,35	2,82	4,12	4,76	1,92	2,96	3,72			
		Q _{c,t} [W]	2462	2899	3120	2039	2548	2762	1047	1348	1549			
		Q _{c,s} [W]	1945	2235	2382	1709	1990	2133	1047	1327	1469			
	MIN	m̄ _w [kg/h]	422	497	535	291	364	395	224	289	332			
		Δp _w [kPa]	3,20	4,30	4,92	1,67	2,46	2,84	1,07	1,65	2,09			
		Q _{c,t} [W]	2116	2491	2680	1736	2190	2373	859	1114	1293			
	MIN	Q _{c,s} [W]	1597	1835	1956	1403	1634	1751	859	1090	1207			
		m̄ _w [kg/h]	363	427	459	248	313	339	184	239	277			
		Δp _w [kPa]	2,45	3,27	3,73	1,27	1,89	2,17	0,78	1,19	1,53			

Heating

Housing length L [mm]	Fan speed	Temperature regime				
		T _w [°C]	T _a [°C]	75/65	70/55	55/45
AC	20	20	20	20	20	20
1250	MAX	Q _h [W]	2249	1837	1301	
		m̄ _w [kg/h]	193	105	112	
		Δp _w [kPa]	1,82	0,67	0,74	
	MED	Q _h [W]	1570	1282	908	
		m̄ _w [kg/h]	135	73	78	
		Δp _w [kPa]	1,00	0,39	0,43	
2000	MAX	Q _h [W]	4829	3943	2793	
		m̄ _w [kg/h]	414	225	239	
		Δp _w [kPa]	12,31	4,14	4,60	
	MED	Q _h [W]	3084	2518	1784	
		m̄ _w [kg/h]	264	144	153	
		Δp _w [kPa]	5,48	1,94	2,14	
2750	MAX	Q _h [W]	2229	1820	1289	
		m̄ _w [kg/h]	191	104	111	
		Δp _w [kPa]	3,12	1,15	1,27	
	MED	Q _h [W]	7469	6099	4320	
		m̄ _w [kg/h]	640	349	370	
		Δp _w [kPa]	39,98	12,95	14,45	
	MIN	Q _h [W]	4596	3753	2658	
		m̄ _w [kg/h]	394	215	228	
		Δp _w [kPa]	16,19	5,47	6,08	
	MIN	Q _h [W]	3282	2680	1898	
		m̄ _w [kg/h]	281	153	163	
		Δp _w [kPa]	8,81	3,10	3,42	

Definition of symbols

AC	AC 230 V fan
Q _{c,t} [W]	Total cooling capacity at 50 % relative air humidity
Q _{c,s} [W]	Sensible cooling capacity
Q _h [W]	Heating capacity
m̄ _w [kg/h]	Water flow
Δp _w [kPa]	Pressure drop on the waterside
T _w [°C]	Water temperature
T _a [°C]	Air temperature

TKH-13 Lx40x14/4C/60**Cooling**

Housing length L [mm]	Fan speed	Temperature regime									
		7/12			8/14			14/18			
AC	T _w [°C]	T _a [°C]	24	26	27	24	26	27	24	26	27
1250	MAX	Q _{c,t} [W]	1417	1668	1796	1187	1467	1589	636	814	925
		Q _{c,s} [W]	1182	1359	1448	1039	1210	1296	636	807	893
		m _w [kg/h]	243	286	308	170	210	227	136	175	198
	MED	Δp _w [kPa]	0,92	1,22	1,38	0,51	0,72	0,82	0,36	0,54	0,66
		Q _{c,t} [W]	1195	1407	1515	991	1237	1340	512	659	755
		Q _{c,s} [W]	951	1093	1165	836	973	1043	512	649	719
2000	MAX	m _w [kg/h]	205	241	260	142	177	192	110	141	162
		Δp _w [kPa]	0,70	0,91	1,03	0,38	0,55	0,62	0,26	0,38	0,47
		Q _{c,t} [W]	902	1062	1142	741	933	1011	369	478	554
	MED	Q _{c,s} [W]	686	788	840	603	702	752	369	468	518
		m _w [kg/h]	155	182	196	106	133	145	79	102	119
		Δp _w [kPa]	0,44	0,57	0,65	0,25	0,35	0,40	0,16	0,24	0,29
2750	MAX	Q _{c,t} [W]	2747	3233	3479	2301	2842	3079	1233	1578	1792
		Q _{c,s} [W]	2291	2633	2806	2013	2345	2512	1233	1563	1731
		m _w [kg/h]	471	554	597	329	406	440	264	338	384
	MED	Δp _w [kPa]	3,71	5,00	5,72	1,96	2,85	3,29	1,34	2,06	2,58
		Q _{c,t} [W]	2270	2673	2877	1880	2349	2546	965	1243	1428
		Q _{c,s} [W]	1793	2061	2196	1576	1835	1966	965	1223	1355
3500	MAX	m _w [kg/h]	389	458	493	269	336	364	207	266	306
		Δp _w [kPa]	2,64	3,54	4,04	1,38	2,03	2,34	0,89	1,36	1,73
		Q _{c,t} [W]	1841	2166	2330	1509	1904	2063	747	969	1124
	MED	Q _{c,s} [W]	1389	1596	1701	1220	1421	1523	747	948	1049
		m _w [kg/h]	316	371	400	216	272	295	160	208	241
		Δp _w [kPa]	1,83	2,43	2,76	0,96	1,41	1,62	0,59	0,90	1,15
4250	MAX	Q _{c,t} [W]	3623	4264	4589	3035	3748	4062	1626	2081	2364
		Q _{c,s} [W]	3021	3473	3701	2655	3092	3313	1626	2062	2283
		m _w [kg/h]	621	731	787	434	536	580	349	446	507
	MED	Δp _w [kPa]	7,49	10,13	11,63	3,89	5,70	6,61	2,64	4,09	5,15
		Q _{c,t} [W]	2697	3175	3418	2237	2791	3025	1155	1486	1705
		Q _{c,s} [W]	2146	2467	2629	1886	2197	2354	1155	1464	1622
5000	MAX	m _w [kg/h]	462	544	586	320	399	432	248	319	365
		Δp _w [kPa]	4,37	5,88	6,72	2,27	3,35	3,87	1,46	2,26	2,87
		Q _{c,t} [W]	2318	2729	2936	1904	2399	2599	949	1229	1423
	MED	Q _{c,s} [W]	1762	2026	2159	1549	1804	1933	949	1203	1332
		m _w [kg/h]	398	468	503	272	343	371	203	263	305
		Δp _w [kPa]	3,33	4,46	5,09	1,72	2,56	2,95	1,05	1,62	2,09

Heating

Housing length L [mm]	Fan speed	Temperature regime				
		T _w [°C]	T _a [°C]	75/65	70/55	55/45
AC	20	20	20	20	20	20
1250	MAX	Q _h [W]	3490	2850	2019	
		m _w [kg/h]	299	163	173	
		Δp _w [kPa]	4,44	1,55	1,71	
	MED	Q _h [W]	2359	1926	1364	
		m _w [kg/h]	202	110	117	
		Δp _w [kPa]	2,23	0,82	0,90	
2000	MAX	Q _h [W]	1628	1329	942	
		m _w [kg/h]	140	76	81	
		Δp _w [kPa]	1,20	0,46	0,51	
	MED	Q _h [W]	7161	5848	4142	
		m _w [kg/h]	614	334	355	
		Δp _w [kPa]	28,93	9,40	10,49	
2750	MAX	Q _h [W]	4842	3954	2800	
		m _w [kg/h]	415	226	240	
		Δp _w [kPa]	13,96	4,70	5,22	
	MED	Q _h [W]	3530	2883	2042	
		m _w [kg/h]	303	165	175	
		Δp _w [kPa]	7,86	2,74	3,03	
3500	MAX	Q _h [W]	10373	8470	5999	
		m _w [kg/h]	889	484	514	
		Δp _w [kPa]	84,33	26,72	29,91	
	MED	Q _h [W]	6963	5686	4027	
		m _w [kg/h]	597	325	345	
		Δp _w [kPa]	39,53	12,87	14,36	
4250	MAX	Q _h [W]	4972	4060	2876	
		m _w [kg/h]	426	232	247	
		Δp _w [kPa]	21,11	7,08	7,88	

Definition of symbols

AC	AC 230 V fan
Q_{c,t} [W]	Total cooling capacity at 50 % relative air humidity
Q_{c,s} [W]	Sensible cooling capacity
Q_h [W]	Heating capacity
m_w [kg/h]	Water flow
Δp_w [kPa]	Pressure drop on the waterside
T_w [°C]	Water temperature
T_a [°C]	Air temperature

■ Other technical data

TKH-13 Lx34x14/.../2C/45

Housing length L [mm]	No. of fans	Water connector dimension ["]	Water content in the heat exchanger [l]	Max. air flow [m³/h]	Sound power L _{WA} [dB]	Sound pressure L _{pA} [dB]	Max. input power [W]	Max. input current [A]
1250	1	1/2	1,2	160	46	38	24	0,20
					37	29		
					31	23		
2000	2	3/4	2,2	320	48	39	48	0,40
					40	31		
					34	25		
2750	3	3/4	3,2	480	50	40	72	0,60
					41	31		
					36	26		

TKH-13 Lx34x14/.../2C/60

Housing length L [mm]	No. of fans	Water connector dimension ["]	Water content in the heat exchanger [l]	Max. air flow [m³/h]	Sound power L _{WA} [dB]	Sound pressure L _{pA} [dB]	Max. input power [W]	Max. input current [A]
							AC	AC
1250	1	1/2	1,2	250	50	42	20	0,12
					42	34		
					39	31		
2000	2	3/4	2,2	500	54	45	40	0,24
					47	38		
					40	31		
2750	3	3/4	3,2	750	55	45	60	0,36
					48	38		
					42	32		

TKH-13 Lx34x14/.../4C/45

Housing length L [mm]	No. of fans	Water connector dimension ["]	Water content in the heat exchanger, heating [l]	Water content in the heat exchanger, cooling [l]	Max. air flow [m³/h]	Sound power L _{WA} [dB]	Sound pressure L _{pA} [dB]	Max. input power [W]	Max. input current [A]
1250	1	1/2	0,4	1,1	160	44	36	24	0,20
						35	27		
						<30	21		
2000	2	1/2	0,7	2,0	320	47	38	48	0,40
						38	29		
						31	22		
2750	3	1/2	1,0	2,9	480	49	39	72	0,60
						40	30		
						34	24		

TKH-13 Lx40x14/.../4C/45

Housing length L [mm]	No. of fans	Water connector dimension ["]	Water content in the heat exchanger, heating [l]	Water content in the heat exchanger, cooling [l]	Max. air flow [m³/h]	Sound power L _{WA} [dB]	Sound pressure L _{pA} [dB]	Max. input power [W]	Max. input current [A]
1250	1	1/2	0,5	1,4	160	44	36	24	0,20
						35	27		
						<30	21		
2000	2	1/2	0,9	2,6	320	47	38	48	0,40
						38	29		
						31	22		
2750	3	1/2	1,3	3,9	480	49	39	72	0,60
						40	30		
						34	24		

TKH-13 Lx34x14/.../4C/60

Housing length L [mm]	No. of fans	Water connector dimension ["]	Water content in the heat exchanger, heating [l]	Water content in the heat exchanger, cooling [l]	Max. air flow [m³/h]	Sound power L _{WA} [dB]	Sound pressure L _{pA} [dB]	Max. input power [W]	Max. input current [A]
								AC	AC
1250	1	1/2	0,4	1,1	250	52	44	20	0,12
						44	36		
						36	28		
2000	2	1/2	0,7	2,0	500	54	45	40	0,24
						47	38		
						39	30		
2750	3	1/2	1,0	2,9	750	56	46	60	0,36
						49	39		
						41	31		

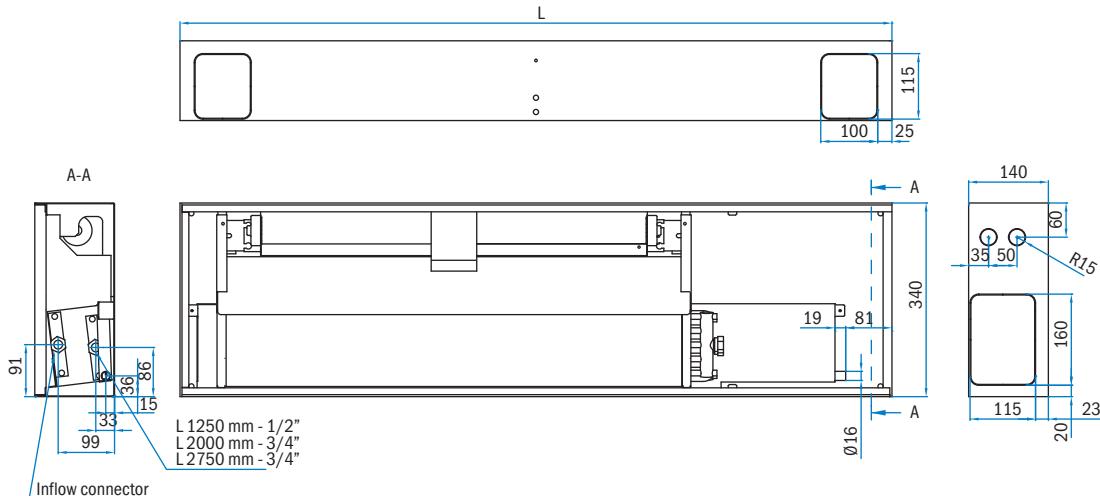
TKH-13 Lx40x14/.../4C/60

Housing length L [mm]	No. of fans	Water connector dimension ["]	Water content in the heat exchanger, heating [l]	Water content in the heat exchanger, cooling [l]	Max. air flow [m³/h]	Sound power L _{WA} [dB]	Sound pressure L _{pA} [dB]	Max. input power [W]	Max. input current [A]
								AC	AC
1250	1	1/2	0,5	1,4	250	50	42	20	0,12
						43	35		
						36	28		
2000	2	1/2	0,9	2,6	500	52	43	40	0,24
						45	36		
						38	29		
2750	3	1/2	1,3	3,9	750	54	44	60	0,36
						47	37		
						40	30		

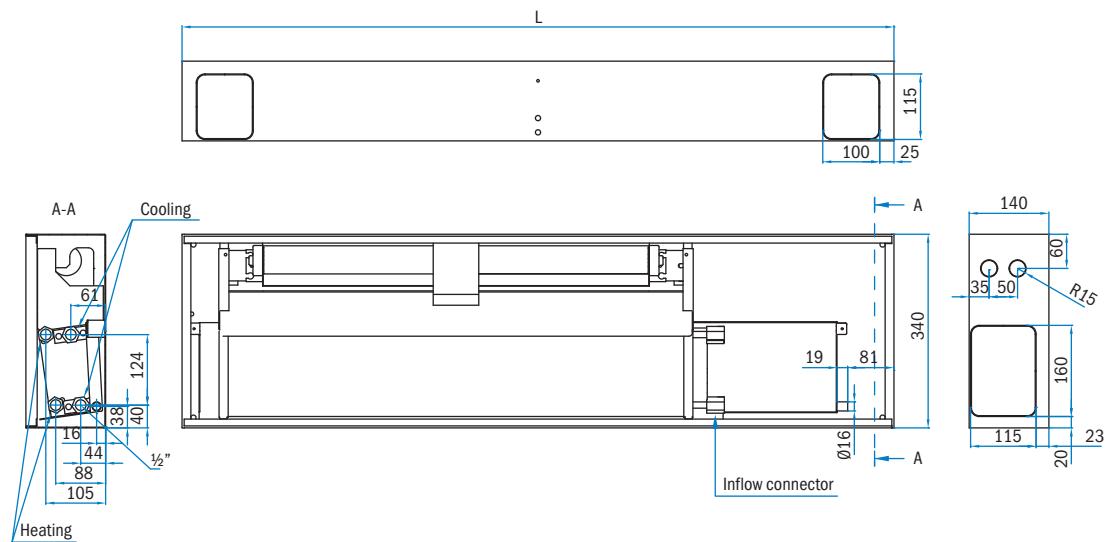
Note: The level of sound pressure L_{pA} is calculated based on the level of sound power L_{WA} emitted by the noise source at a certain distance (1 m) and depends on the installation type (free space or next to a wall).

Dimensions

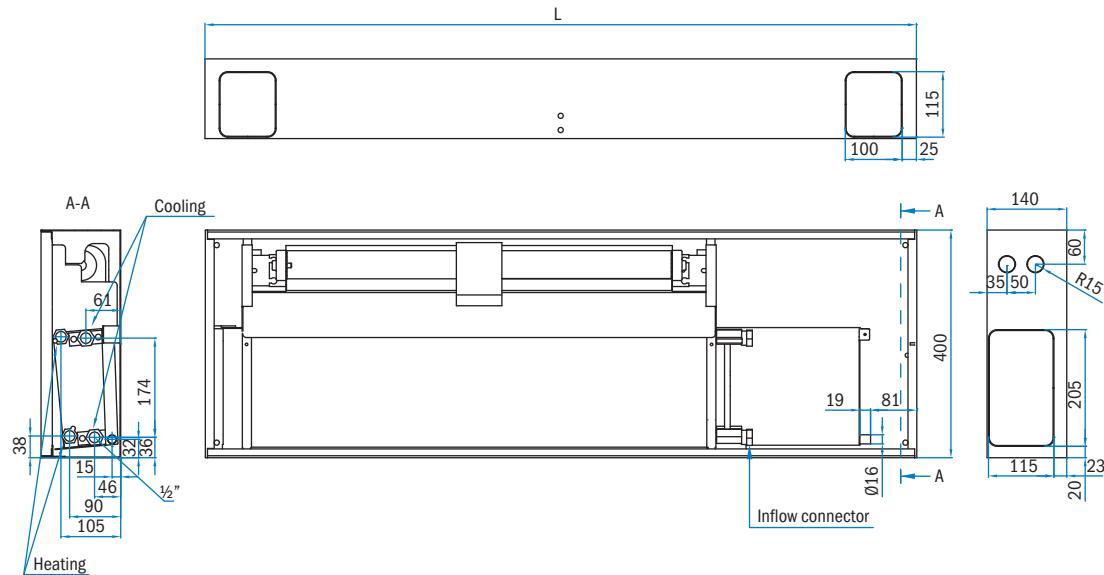
TKH-13 Lx34x14/.../2C



TKH-13 Lx34x14/.../4C

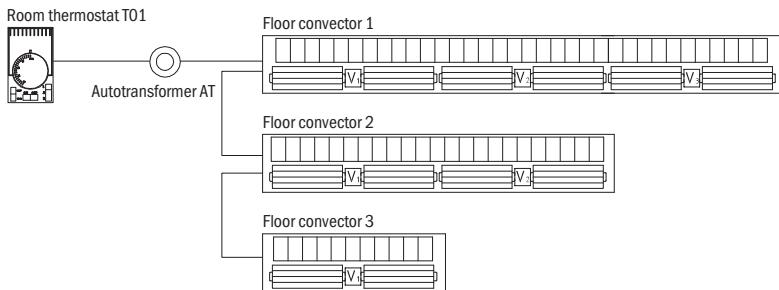


TKH-13 Lx40x14/.../4C

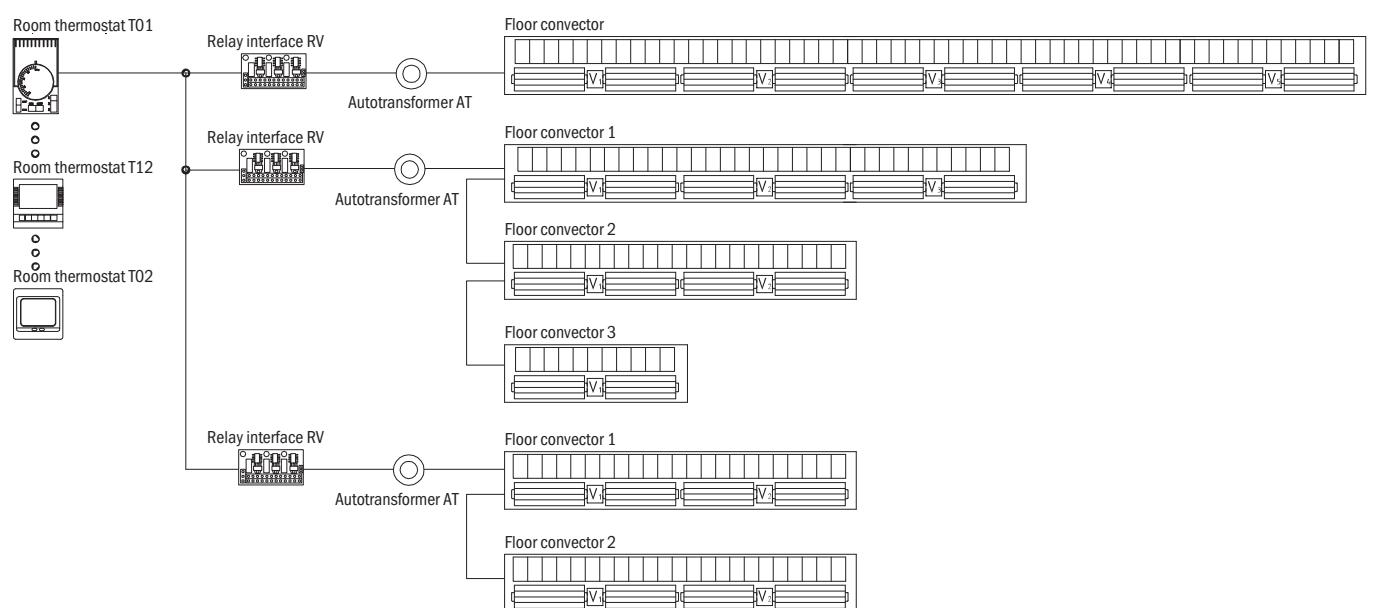


Examples of floor convectors connections into groups

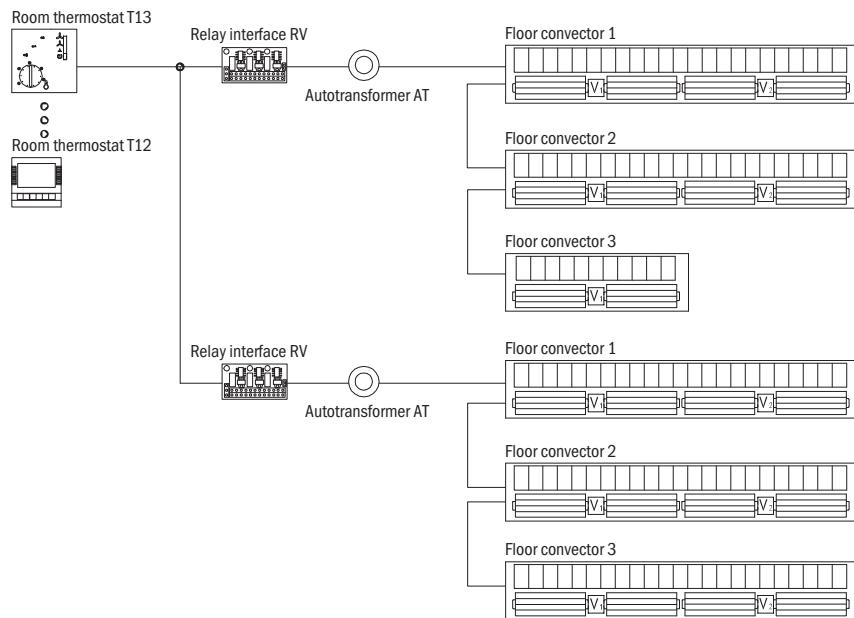
Example 1: 2-2-pipe system, room thermostat, up to 6 fans



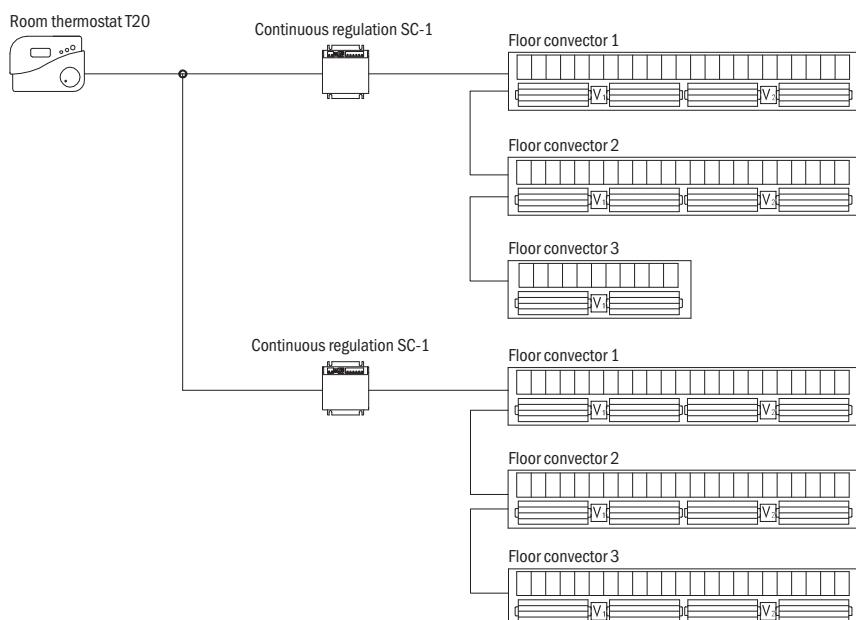
Example 2: 2-pipe system, room thermostat, more than 6 fans



Example 3: 4-4-pipe system, room thermostat, more than 6 fans



Example 4: Continuous regulation



Accessories

Code	Tread-on grille	
111	Standard tread-on grille design: Longitudinal fixed aluminium grille	Anodised Standard: natural aluminium colour, black, brass colour On request: chocolate, bronze
114	Roll-up aluminium grille	Anodised Standard: natural aluminium colour, black, brass colour On request: chocolate (114E), bronze (114F)
114W	Roll-up wooden grille	Wood type Standard: oak, ash, walnut, mahogany, On request: wenge (114W5), cherry (114W6)
114SS	Roll-up grille	Stainless steel

Code	Control accessories
Water side control (control of the warm water flow rate into the convector)	
01	Thermostat valve R1/2", R3/4", straight
02	Thermostat valve R1/2", R3/4", angular
03	Radiator shut-off cock R1/2", R3/4", straight
04	Radiator shut-off cock R1/2", R3/4", angular
VP2	Two-way valve with ET actuators ON-OFF (2-pipe set)
VP4	Two-way valve with ET actuators ON-OFF (4-pipe set)
VT2	Three way valve with ET actuator ON-OFF (2-pipe set)
VT4	Three way valve with ET actuator ON-OFF (4-pipe set)

	Air side control (fan operation control)
T01	Room thermostat for 2-pipe systems, surface installation
T02	LCD room thermostat for 2-pipe systems, semi-flush installation
T12	LCD room thermostat for 2- and 4-pipe systems, semi-flush installation
T13	Room thermostat for 4-pipe systems, surface installation
T20	Room thermostat for continuous regulation of AC fans, surface installation
RV	Relay interface for 2- and 4-pipe systems
09S	Fan speed controller for TKV-S-13
SC 1	Room thermostat for continuous regulation of AC fans
AT45	Autotransformer for AC fans control for TKV-13 and TKH-13/45
AT60	Autotransformer for AC fans control TKH-13/60

Code	Other accessories
010(xx°)	Corner design of convector and grille
017	Housing thermal insulation
018	Wooden protection cover (protection of the convector during the installation)
020(Rxxxx)	Round shaped convector and grille
021	Aluminium frame, fixed to the housing
028	Level adjusting legs, leveling height 20 – 70 mm
029	Level adjusting and support legs, with reinforced housing (upon request)
032	Connection for fresh air supply, without damper (upon request)
033	Connection for fresh air supply, with damper (upon request)

■ Types and colours of tread-on grilles

Longitudinal aluminium tread-on grilles

111D longitudinal fixed grille,
anodised in natural aluminium colour



111B longitudinal fixed grille,
anodised in black colour



111C longitudinal fixed grille,
anodised in brass colour



111E longitudinal fixed grille, anodised in
chocolate colour

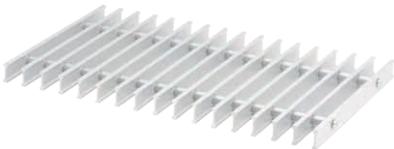


111F longitudinal fixed grille,
anodised in bronze colour



Aluminium and stainless steel roll-up grilles

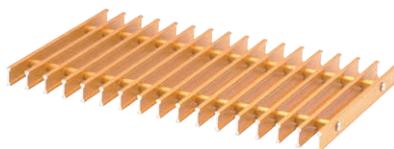
114D roll-up grille, anodised in
natural aluminium colour



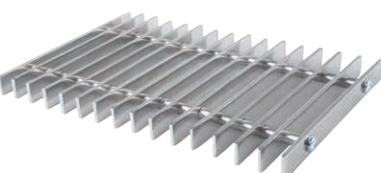
114B roll-up grille, anodised in
black colour



114C roll-up grille, anodised in
brass colour



114SS roll-up grille, stainless steel



114E roll-up grille, anodised in
chocolate colour

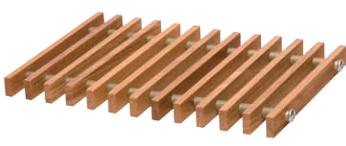


114F roll-up grille, anodised in
bronze colour

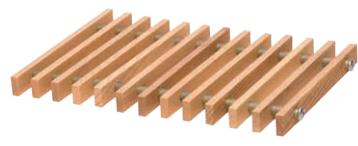


Wooden roll-up grilles

114W1 oak wood



114W2 ash wood



114W3 walnut wood



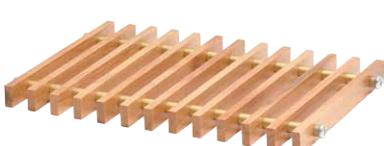
114W4 mahogany wood



114W5 wenge wood



114W6 cherry wood



Note: Longitudinal tread-on grilles are designed to withstand the weight of an individual person, while in case of larger loads roll-up grilles are recommended.

■ Water side control

01 Thermostat valve R1/2" ali R3/4", straight



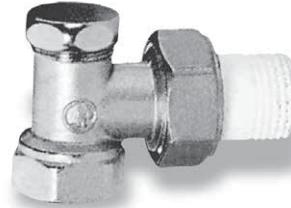
02 Thermostat valve R1/2" or R3/4", angular



03 Radiator shut-off cock R1/2"ali R3/4", straight



04 Radiator shut-off cock R1/2"or R3/4", angular



VP2 Two-way valve with ET actuators ON-OF (2-pipe set)



VP4 Two-way valve with ET actuators ON-OF (4-pipe set)



VT2 Three way valve with ET actuator ON-OF (2-pipe set)



VT4 Three way valve with ET actuator ON-OF (4-pipe set)



Notes:

- valve size (R1/2", R3/4") depends on the size of heat exchanger connector size (not necessary to state),
- manual valves 01-04 are only supplied with the convector but not installed, sets of two- and three-way valves are installed,
- sets of three-way valves VT2 and VT4 require more space for installation, possibility of installation should be confirmed by the producer before an order.

Air side control

T01 Room thermostat

- for 2-pipe systems
- wall installation
- room temperature setup
- manual speed selection
- manual regime (heating – cooling) selection



T13 Room thermostat

- for 4-pipe systems
- wall installation
- room temperature setup
- manual speed selection
- automatic regime (heating – cooling) switching



T20 Electronic LCD room thermostat for continuous control of AC or EC fans

- for 2-pipe and 4-pipe systems
- wall installation
- display of room temperature, set room temperature and parameters
- manual 3-step (MIN-MED-MAX) or continuous (2-10 Vdc) fan speed regulation
- manual regime selection (heating – cooling- auto)



T02 Electronic LCD room thermostat (touch screen)

- for 2-pipe systems
- semi-flush installation into the enclosed electrical socket
- setup and display of room temperature
- manual or auto speed selection
- manual regime (heating – cooling) selection



T12 Electronic LCD room thermostat

- for 2-pipe and 4-pipe systems
- semi-flush installation into standard electrical socket Ø60 mm (not enclosed)
- setup and display of room temperature
- manual or auto speed selection
- automatic regime (heating – cooling) selection
- possibility to connect an external temperature sensor



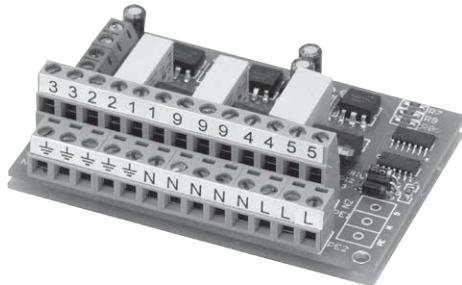
AT45 Avtotransformer AT45 is designed for 3-step speed control of 1 to max. 6 fans type 45 installed in TKV-13 or TKH-13 floor convectors.



RV Relay interface is designed to attach autotransformer AT45 or AT60 in 2- or 4-pipe models of TKV-13 or TKH-13 floor convectors:

- connection to a room thermostat to control several groups of floor convectors connected to one room thermostat (more than 6 fans in a group)
- connection to a room thermostat or BMS with 3-step (MIN-MED-MAX) outputs 230 Vac output for fan speed

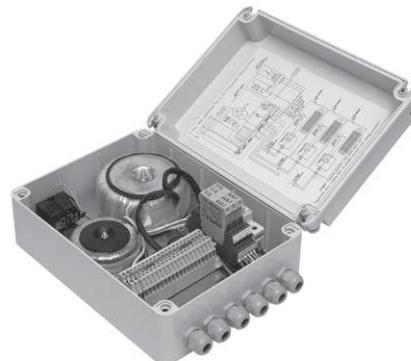
In case when 6 or less ventilators are controlled with a single T01 room thermostat, RV is not needed.



AT60 Avtotransformer AT60 is designed for 3-step speed control of 1 to max. 6 fans type 60 installed in TKH-13 floor convectors.



09S This fan speed controller for the TKV-S-13 is used for 3-step regulation of 12V fans, mounted into the TKV-S-13, in connection with the T01 thermostat. We can connect max. 6 fans to one 09S.



SC 1 Controller for continuous control of max. 6 AC fans:

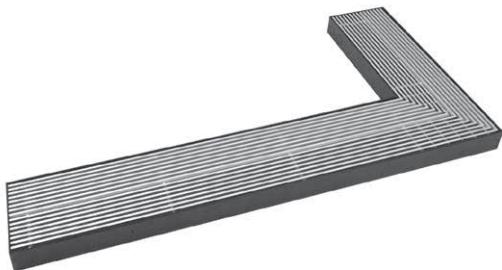
- connection to room thermostat T20
- connection to CNS with 2-10 V output for fan speed control



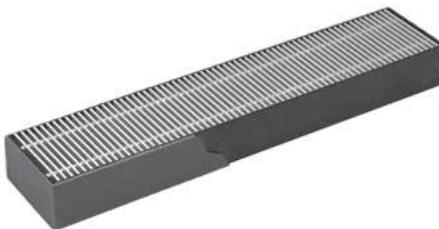
Note: Floor convectors with EC fans and control are available upon request only.

■ Other

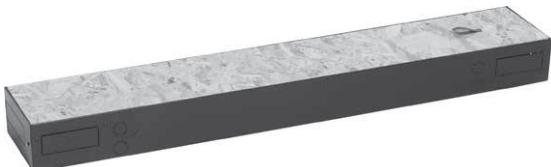
010(xx°) Corner design of convector and grille according to drawing



017 Housing thermal insulation



018 Wooden protection cover

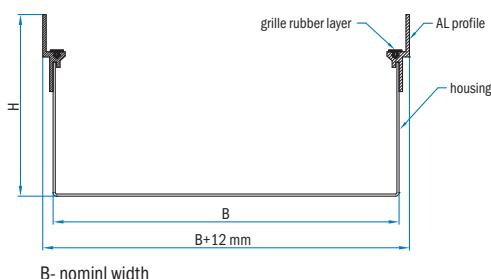


021 Aluminium frame



020(Rxxxx) Round shaped convector and grille:

- according to drawing
- TK-13 and TKV-13 models
- roll-up grille only



Note:

when ordering accessory 021, lenght and width of housing increase for 12 mm. According to this, the length and width of the grille change also.

028 Level adjusting legs

- Leveling height (distance to the bottom of floor convector) is 20–70 mm.
- Installation possible in models of 105 and 140 mm height only.
- different project solutions upon request



029 Level adjusting and support legs

- recommended for installation into false floor
- set with reinforced housing bracket
- available upon request



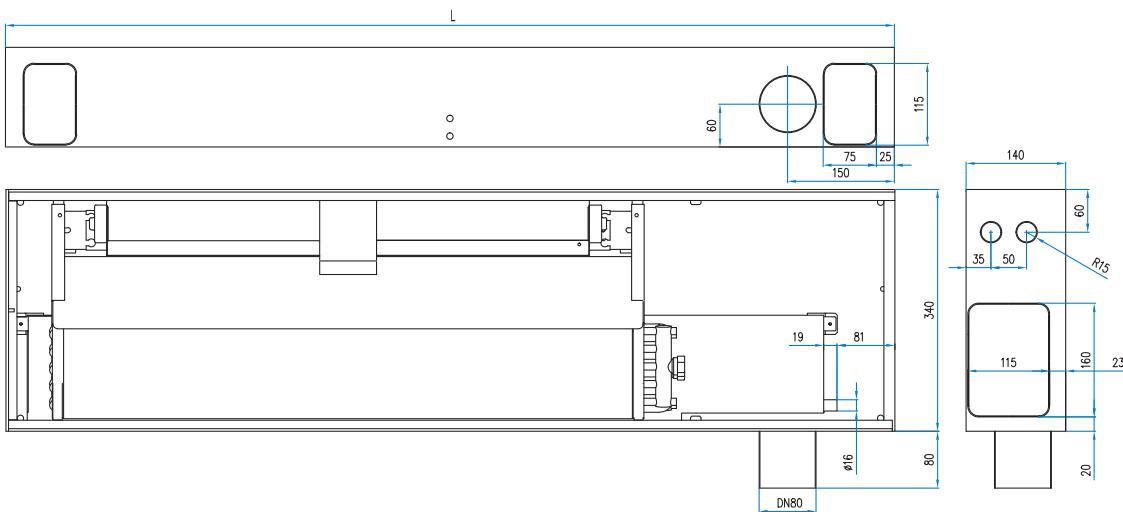
Connection for fresh air supply

032 Connection for fresh air supply, size DN 80, without damper. Installation on TK-13, TKV-13 and TKH-13 models, with 140 mm height. Max. air flow rates up 80 m³/h per connection. Different project solutions possible.

033 Connection for fresh air supply with damper, size DN 80. Installation on TK-13, TKV-13 and TKH-13 models, with 140 mm height. Max. air flow rates up 80 m³/h per connection. Available upon request only.



Example: TKH-13 125x34x14/D/2C/45/032



Custom - made convectors

Special versions of floor convectors with non-standard dimensions and technical characteristics can be produced on customer's request and specifications.

Ordering key for TKH-13 floor convector types:

TKH-13 125x34x14/D/2C/45/T12,AT60,RV,...,VP4,.../114W3,021,018/010(xx°)/028/..., ...



*Designation L (left) and D (right) indicate the side water connections, whereby it is necessary to look at the convector from the room towards the window.



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