



THE SENSOTHERM **HE**
HEAT EXCHANGERS

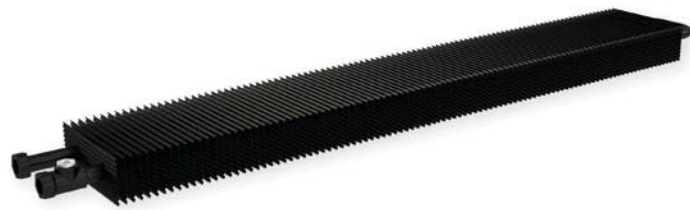
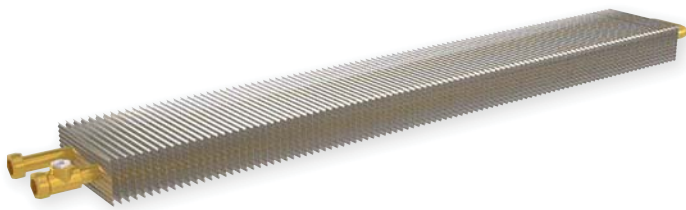
Senso
therm
heat with style



[Sensotherm HE

HEAT EXCHANGERS

The heart of our convectors is the heat exchanger. However, its application is much wider. Imagine that you would like your heating elements to completely blend with the interior. Build your exchangers into materials, the entire interior of which is compactly created, and into places where you want to have them. A real design solution that will fulfil even the most exacting notions of preserving the required interior design.



Al/Cu heat exchanger with low water content Sensotherm HE

It is suitable for individual installation, especially in places where dimensions are limited in terms of materials used. If certain conditions are adhered to, the Sensotherm HE heating exchangers can be covered with almost any material to integrate them unobtrusively into the required space. The exchanger is made of copper pipes and aluminium fins.

Standard delivery contains

- Al/Cu heat exchanger with low water content, air vent and uniquely shaped fins for a higher heat output
- heat exchanger mounting instructions
- the set is packed in strong PVC foil with protectors on edges

Specification

widths (mm)	60, 120, 180
height (mm)	50, 110
lengths (mm)	800 up to 3 000 (at 200 mm steps)
max. working pressure	12 Bar
max. working temperature	110 °C
connecting thread	inner G 1/2"
outputs	by the exchanger covering height, see the output and correction factors tables for a variant case height

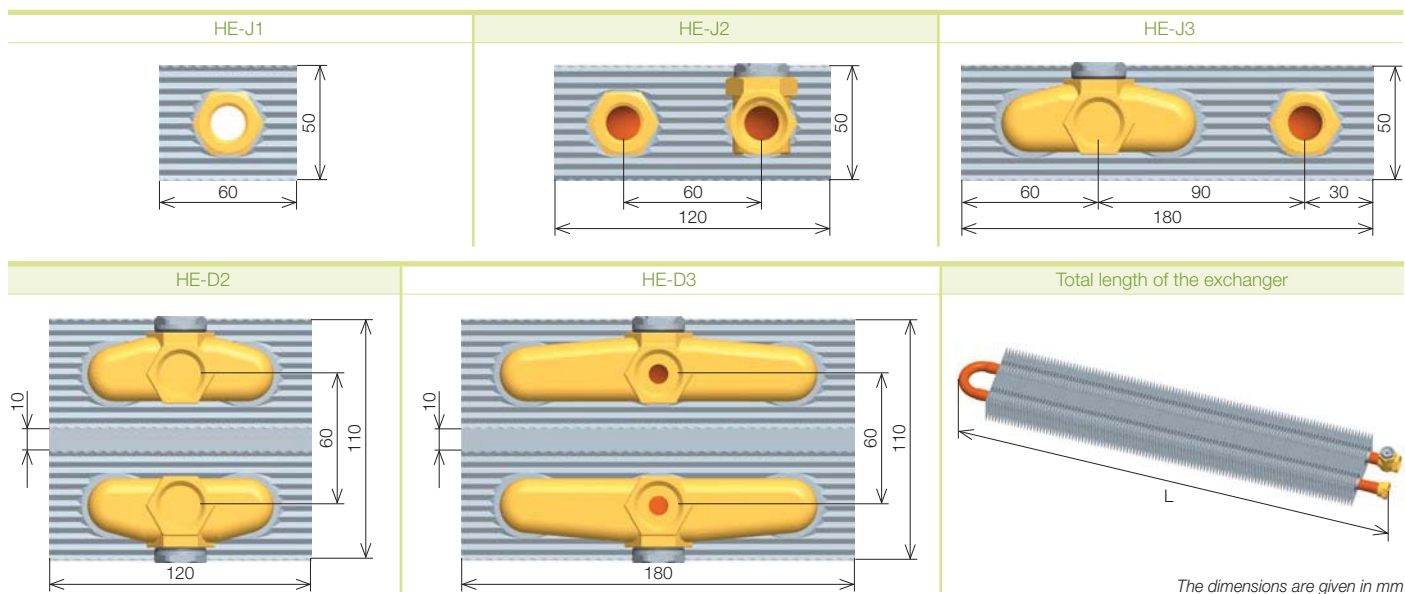
Standard Version • exchanger with no surface finishes
Special Order • black coat at additional cost

Selectable specification

- stands and / or consoles to fit the exchanger on, see page 4.



Elements' sections



Heat outputs

Heat outputs (W) at 75/65/20 °C ($\Delta t=50$) and 65/55/20 °C ($\Delta t=40$) / EN 442

HE type	Δt	Length L (cm)											
		80	100	120	140	160	180	200	220	240	260	280	300
HE-J1	$\Delta t 50$	269	344	419	494	568	643	718	793	868	942	1017	1092
	$\Delta t 40$	201	257	313	369	425	481	537	593	649	705	761	817
HE-J2	$\Delta t 50$	542	697	851	1006	1161	1316	1471	1625	1780	1935	2090	2245
	$\Delta t 40$	405	521	637	753	869	984	1100	1216	1332	1448	1564	1679
HE-J3	$\Delta t 50$	685	890	1095	1299	1504	1708	1913	2118	2322	2527	2731	2936
	$\Delta t 40$	513	666	819	972	1125	1278	1431	1584	1737	1891	2044	2197
HE-D2	$\Delta t 50$	636	824	1011	1198	1385	1572	1760	1947	2134	2321	2508	2696
	$\Delta t 40$	476	616	756	896	1036	1177	1317	1457	1597	1737	1877	2017
HE-D3	$\Delta t 50$	948	1227	1506	1784	2063	2342	2621	2900	3178	3457	3736	4015
	$\Delta t 40$	709	918	1126	1335	1544	1752	1961	2169	2378	2587	2795	3004

The stated heat outputs apply to the height of 10 cm above the floor and the cover height of 20 cm from the bottom edge of the fins.

Correction factor k_t for a variant temperature difference Δt (K)

Δt (K)	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
k_t	0.265	0.284	0.304	0.324	0.344	0.364	0.385	0.406	0.427	0.449	0.471	0.493	0.515	0.537	0.560	0.583
Δt (K)	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
k_t	0.606	0.629	0.652	0.676	0.700	0.724	0.748	0.773	0.797	0.822	0.847	0.872	0.897	0.923	0.948	0.974
Δt (K)	50	51	52	53	54	55	56	57	58	59	60					
k_t	1.000	1.026	1.052	1.079	1.105	1.132	1.159	1.186	1.213	1.240	1.267					

Weights and volumes of water of the heat exchangers

Type	J1	J2	J3	D2	D3
kg/linear meter	0.74	1.47	2.23	3.04	4.56
l/1 linear meter	0.22	0.5	0.75	1	1.6

The listed weights are without packaging.

Sensotherm HE exchanger installation

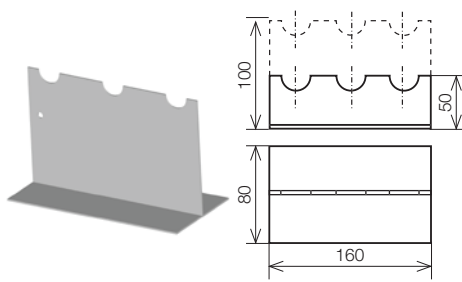
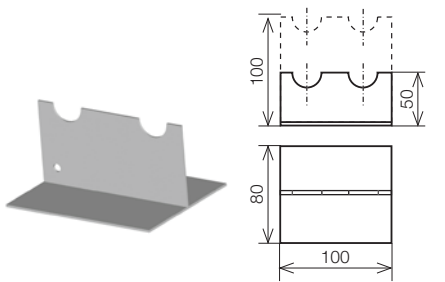
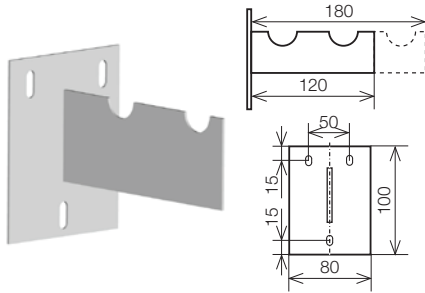
Installation instructions

For proper functioning ensure sufficient supply of air, adequately sealed convector case and the outlet grid must vent adequately. We recommend the exchangers are installed 10 cm above the clean floor.

We supply 2 types of bracket for this purpose. These could be of the floor mounting design (stand type) of 5 and 10 cm height, or of the wall-suspension design.

The number of the exchanger's pipes determines the width of the bracket, see below. The brackets are supplied at extra cost, depending on type required.

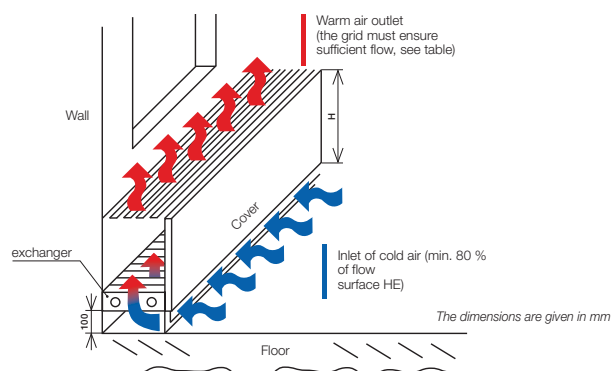
Mounting location

Floor mounting stands	Floor mounting stands	Wall mounting consoles
HE-J3, HE-D3	HE-J2, HE-D2	HE-J2, HE-D2, HE-J3, HE-D3
(supplied in black finish as standard)	(supplied in black finish as standard)	(supplied in white finish as standard)
		

The dimensions are given in mm

Correct installation

The heat output of the exchanger is dependent on several key conditions: the effective height of the cover, how well the cover (case) seals, the supply of the heated air and the size of the outlet grid's flow area (see drawing). In general, the higher the cover is positioned, the higher the heat output. The case of the convector and the adjacent building structures must be resistant to the rated temperatures of the heat-carrying media.



Correction factor for a different case height H

Correction factor of the cover grid's flow surface

H (m)	0.200	0.250	0.300	0.350	0.400	0.450	0.500	0.550	0.600
kh	1.000	1.051	1.136	1.207	1.268	1.322	1.371	1.416	1.457

The case height H (m) is taken from the bottom edge of the heat exchanger fins. Example: Conversion of the heat output of the HE-J3/-180 exchanger to the output in a case 0.45 m high.
 $Q = 1708 \times 1.322 = 2258 \text{ W}$

% of flow surface	> 75	60	50	40	30
correction factor	1.00	0.95	0.90	0.85	0.60

The flow surface means the flow surface of the heat exchanger (width \times length of the heat exchanger) minus the area of the grille (all dimensions given in %). The heat output of the particular heat exchanger is multiplied by this correction factor. Measurements of the performances of the Sensotherm products include the breathing grille therefore it is not necessary to further recalculate them.

Ordering codes Heat exchangers HE

Standard Issue [unpainted exchanger HE-J1-x length](#) Optional [unpainted exchanger HE-D2-x length](#)
 Standard Issue [unpainted exchanger HE-J2-x length](#) Optional [unpainted exchanger HE-D3-x length](#)
 Standard Issue [unpainted exchanger HE-J3-x length](#) Optional [coated exchanger is the same for all HE types](#)

ORDERING CODE: HE type/length (in cm),
 example: HE-J3-200 = Sensotherm HE-J3
 single-row three-pipe heat exchanger,
 length 200 cm



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