

DBE Units_Technical details

Air flow

Type	m³/h	
	Comfort	Boost
DBEU.06	77	115
DBEU.10	103	152
DBEU.15	108	134

Speeds

Type	RPM	
	Comfort	Boost
DBEU.06	1150	1710
DBEU.10	1130	1670
DBEU.15	850	1050

Speeds mounted measured

DBEU06



DBEU10



DBEU15



The noise level

Comfort-mode: sound pressure less than 29 dB(A) per DBE unit (internal sound).
Boost-mode: less than 35 dB(A) per DBE unit (internal sound).

Electrical characteristics

Maximum consumption per DBE unit in Boost-mode :
- type 06: 2.7 Watts
- type 10-11: 2.8 Watts
- type 15-16-20-21: 2.2 Watts
Power consumption of control unit: 0.0516 Watts.
Power supply 12VDC 24 Watts. The electronically switched power supply satisfies all international safety requirements.
A maximum of 6 DBE units can be connected to this supply. The low tension is very secure.

Life expectancy:

As a result of the use of high quality ball bearings, the life expectancy of the DBE units is 50.000 operating hours at a temperature of 40°C.
The activators are protected against stalling through blockage. However, blockage should be avoided so as to avoid damage to the activator blades.

Quality mark :

The appliance is CE tested and works according to the valid AMC standards EN55014, EN61000 and security demands.
The DBE system also disposes of CEBEC hall-mark.



Pressure sound and correction factors

Type	db(A)	
	Comfort	Boost
DBEU.06	27	34
DBEU.10	29	35
DBEU.15	27	31

Reverberation time T1 0,6 s
Room of reference V1 80m³
Pressure of reference P0 2.10⁻⁵Pa

Other reverberation time

Reverberation Time (s)	Correction [dB(A)]
2.5	+ 6.2
2.0	+ 5.2
1.5	+ 4.0
1.0	+ 2.2

$$P_2 = P_1 - 10 \log \frac{T_2}{T_1}$$

P1 = table of sound pressure

P2 = sound level to be calculated

T1 = reverberation time of room of reference (T1 = 0,6 sec)

T2 = other reverberation time of room

Other room volume

Content (m3)	Correction [db(A)]
80	0
150	- 2.7
200	-4.0
250	-4.9
300	-5.7
350	-6.4
400	-7.0
500	- 8.0
600	- 8.8

Calculation of sound pressure for other local content

$$P_2 = P_1 - 10 \log \frac{V_2}{V_1}$$

P1 = table of sound pressure

P2 = sound level to be calculated

V1 = size of room of reference (80 m³)

V2 = other room size

Several appliances with an equal sound level in a room

Number [db(A)]	Correction [db(A)]
2	+ 3.0
3	+ 4.8

$$P_2 = P_1 + 10 \log n$$

P1 = sound level one appliance

P2 = sound level to be calculated

n = number of appliances

Through the DBE-communication software (DBED) it is possible to set up others activator speeds. In this way you can obtain other outputs and sound pressures. For more information: consult the manufacturer or the help function which explains the communication software.

DBE_Correction factors

Average correction factors according - 75/65/20°C for Comfort and Boost mode

Tv	Tl	Tr > 20	25	30	35	40	45	50	55	60	65	70	75	80	85
90	20	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35
	24	0.62	0.67	0.72	0.77	0.82	0.87	0.92	0.97	1.02	1.07	1.12	1.17	1.22	1.32
85	20	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20	1.25	
	24	0.57	0.62	0.67	0.72	0.77	0.82	0.87	0.92	0.97	1.02	1.07	1.12	1.17	
80	20	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15		
	24	0.52	0.57	0.62	0.67	0.72	0.77	0.82	0.87	0.92	0.97	1.02	1.07		
75	20	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05			
	24	0.47	0.52	0.57	0.62	0.67	0.72	0.77	0.82	0.87	0.92	0.95			
70	20	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95				
	24	0.42	0.47	0.52	0.57	0.62	0.67	0.72	0.77	0.82	0.87				
65	20	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85					
	24	0.37	0.42	0.47	0.52	0.57	0.62	0.67	0.72	0.77					
60	20	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75						
	24	0.32	0.37	0.42	0.47	0.52	0.57	0.62	0.67						
55	20	0.35	0.40	0.45	0.50	0.55	0.60	0.65							
	24	0.27	0.32	0.37	0.42	0.47	0.52	0.57							
50	20	0.30	0.35	0.40	0.45	0.50	0.55								
	24	0.22	0.27	0.32	0.37	0.42	0.47								
45	20	0.25	0.30	0.35	0.40	0.45									
	24	0.17	0.22	0.27	0.32	0.37									
40	20	0.20	0.25	0.30	0.35										
	24	0.12	0.17	0.22	0.27										
35	20	0.15	0.20	0.25											
	24	0.07	0.12	0.17											
30	20	0.10	0.15												
	24	0.02	0.07												

Example

The indicated outputs with ΔT 50 are the exact outputs. An average correction factor is given in the table above for all other ΔT outputs, applicable for all dimensions.


Tv = flow temperature
 Tr = return temperature
 Tl = desired air temperature

Example 1

Select a radiator of 1000 Watts at: Tv = 75°C, Tr = 65°C and Tl = 20°C.
 When you want to know how much radiator delivers up at Tv=50°C, Tr=40°C and Tl=24°C. In the table you can see the factor 0.42 with these temperatures. The radiator would therefore deliver up on this temperature (1000 x 0.42) = 420 Watts.

Example 2

You want to select a radiator that delivers up 1000 Watts by Tv = 50°C, Tr = 40°C and Tl = 24°C.
 In the table you can see the factor 0.42 with these temperatures.
 On Tv = 75°C, Tr = 65°C and Tl = 20°C you need a radiator to select of 1000 : 0.42 = 2381 Watts in comfort-mode.
 (Here you can see an example MINF.028 181 11/DBE)

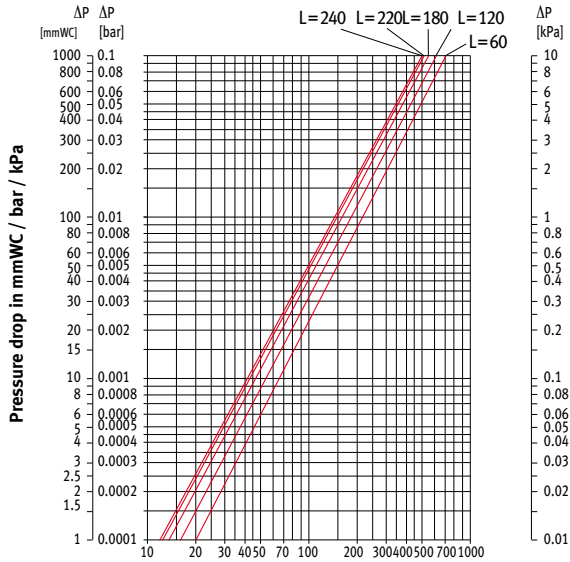
 Output calculated in accordance with EN442, at a water temperature of 75/65°C and a room temperature of 20°C ($\Delta T=50$).

DBE
 Dynamic Boost Effect



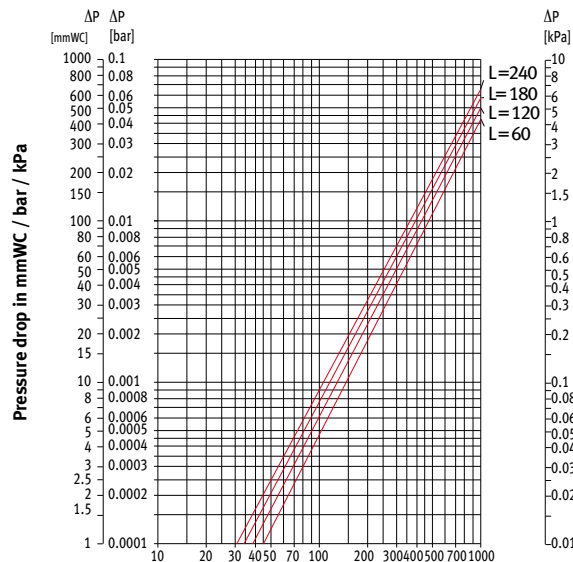
DBE_Hydraulic pressure drop Low-H2O elements

Pressure drop type 06



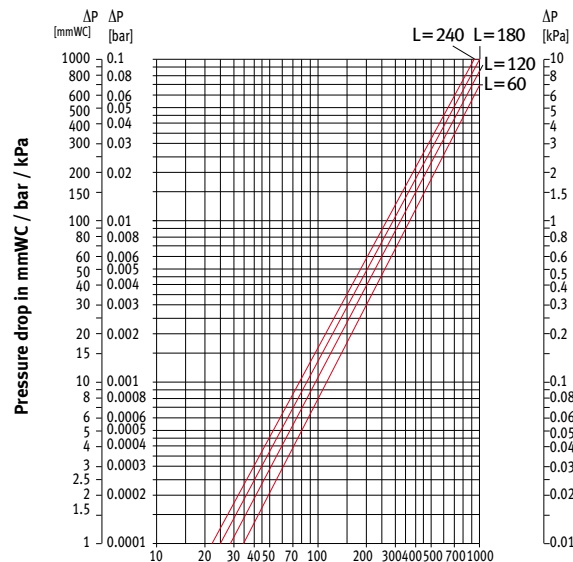
Water flow in kg/h	0.15	0.2	0.3	0.4	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10	kW
$\Delta t=10^\circ\text{C}$	0.15	0.2	0.3	0.4	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10	0.1
$\Delta t=15^\circ\text{C}$	0.2	0.3	0.5	0.8	1	1.5	2	3	4	5	6	8	10				0.15
$\Delta t=20^\circ\text{C}$	0.3	0.4	0.6	0.8	1	1.5	2	3	4	5	6	8	10				0.2
$\Delta t=40^\circ\text{C}$	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10					0.3

Pressure drop type 10



Water flow in kg/h	0.15	0.2	0.3	0.4	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10	kW
$\Delta t=10^\circ\text{C}$	0.15	0.2	0.3	0.4	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10	0.1
$\Delta t=15^\circ\text{C}$	0.2	0.3	0.5	0.8	1	1.5	2	3	4	5	6	8	10				0.15
$\Delta t=20^\circ\text{C}$	0.3	0.4	0.6	0.8	1	1.5	2	3	4	5	6	8	10				0.2
$\Delta t=40^\circ\text{C}$	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10					0.3

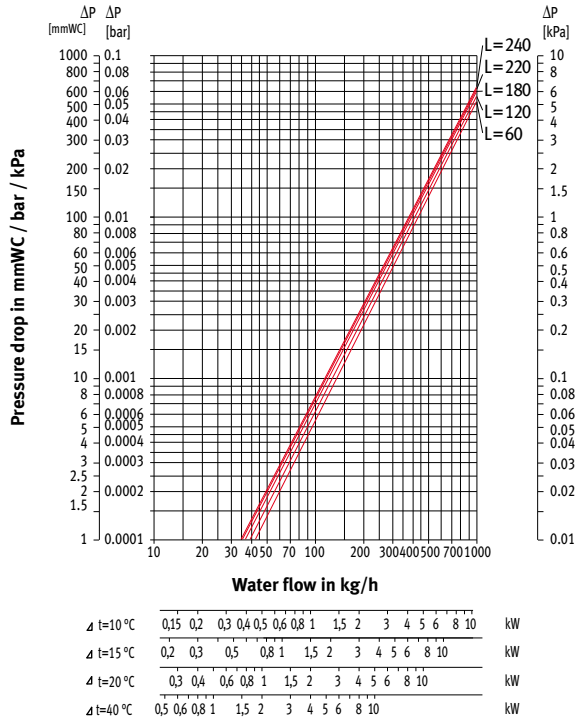
Pressure drop type 11



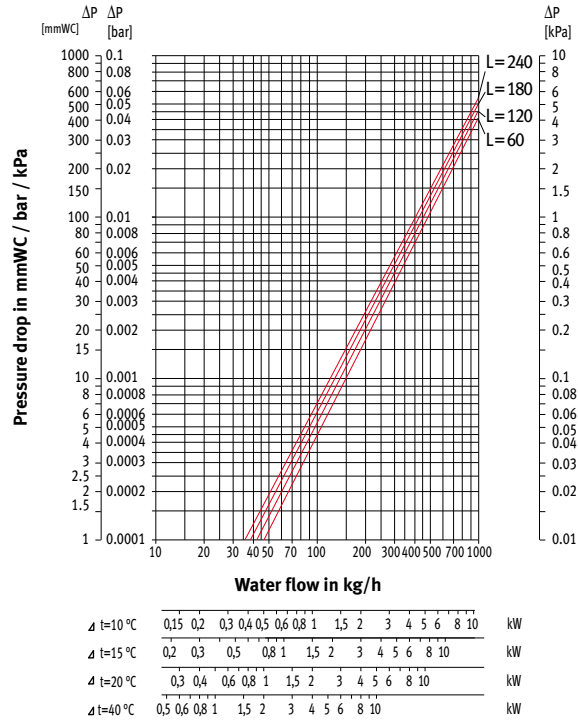
Water flow in kg/h	0.15	0.2	0.3	0.4	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10	kW
$\Delta t=10^\circ\text{C}$	0.15	0.2	0.3	0.4	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10	0.1
$\Delta t=15^\circ\text{C}$	0.2	0.3	0.5	0.8	1	1.5	2	3	4	5	6	8	10				0.15
$\Delta t=20^\circ\text{C}$	0.3	0.4	0.6	0.8	1	1.5	2	3	4	5	6	8	10				0.2
$\Delta t=40^\circ\text{C}$	0.5	0.6	0.8	1	1.5	2	3	4	5	6	8	10					0.3

DBE_Hydraulic pressure drop Low-H2O elements

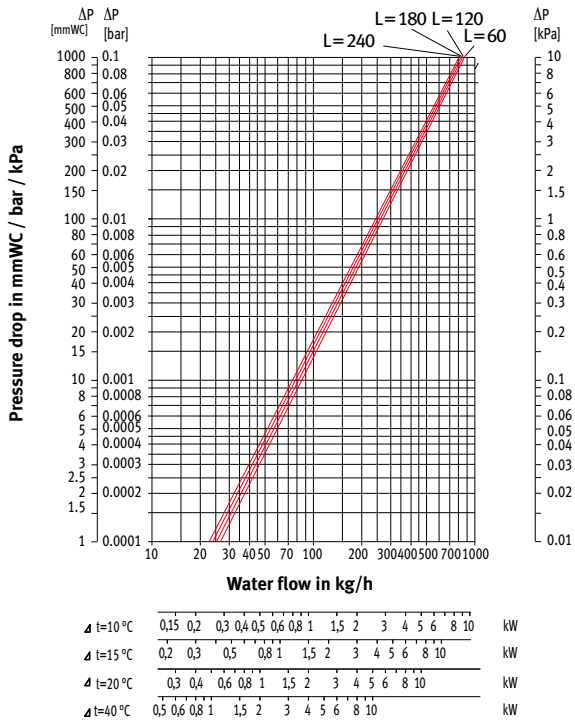
Pressure drop type 15



Pressure drop type 20



Pressure drop type 16



Pressure drop type 21

