Versatile

Versatile Vertiga Hybrid

VERTIGA HYBRID

VERTIGA HYBRID

HEATING OR HEATING + LIGHT COOLING: THE IDEAL HEAT PUMP HEATING UNIT

HIGH OUTPUT WITH ALL WATER TEMPERATURES, HOT AND COLD

For optimum yield, new, environmentally-friendly installations require an improved output system.
This ensures a comfortable heat at a low water temperature and a sufficient coolness with non-condensing cooling.
Jaga Hybrid heating units are equipped with the brand new DBH system; DB stands for Dynamic Boost, to considerably increase the power of the heater. The H of Hybrid stands for the dual effect: heating and cooling.

- perfectly controlled heating at the lowest water temperature thanks to the hybrid system's reaction speed
- by default, suitable for energy-efficient non-condensing cooling in combination with any heat pump

MOST RESPONSIVE OUTPUT SYSTEM CRUCIAL FOR HEATING AND COOLING DOWN

HEATING

Is the oven or dishwasher on? If the sun shines inside?
Your home is a dynamic given with constantly changing temperature conditions and comfort requirements. A quickly reacting heater such as Jaga Hybrid anticipates this and accurately controls the temperature in all circumstances.

JAGA LIGHT COOLING®

The reaction capacity is also crucial for non-condensing cooling. In order to prevent moisture problems, central condensation monitoring must be provided. This can only work efficiently with a very fast-acting delivery system, which immediately adjusts the cooling system in case of a sudden rise in humidity. **More than ever, the responsiveness determines your energy consumption and your comfort.**

PENCIL-PROOF AIR INTAKE at the top and bottom

FULLY PRE-ASSEMBLED CASSETTE

AIR VENT

WHISPER-QUIET BOOSTERS

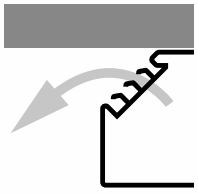
USER FRIENDLY OPERATION
with three power positions and LED indication, mounted on the side of the Vertiga
Vertiga Hybrid switches fully automatically between heating and light cooling

SOUND INSULATION
for a whisper-quiet operation

PRE-PERFORATED OPENINGS
for electrical cabling

12V POWER SUPPLY AND CONTROL (JDPC.002)

HIDDEN VERTICAL DESIGN GRILLES
distribute the warm air all around the room

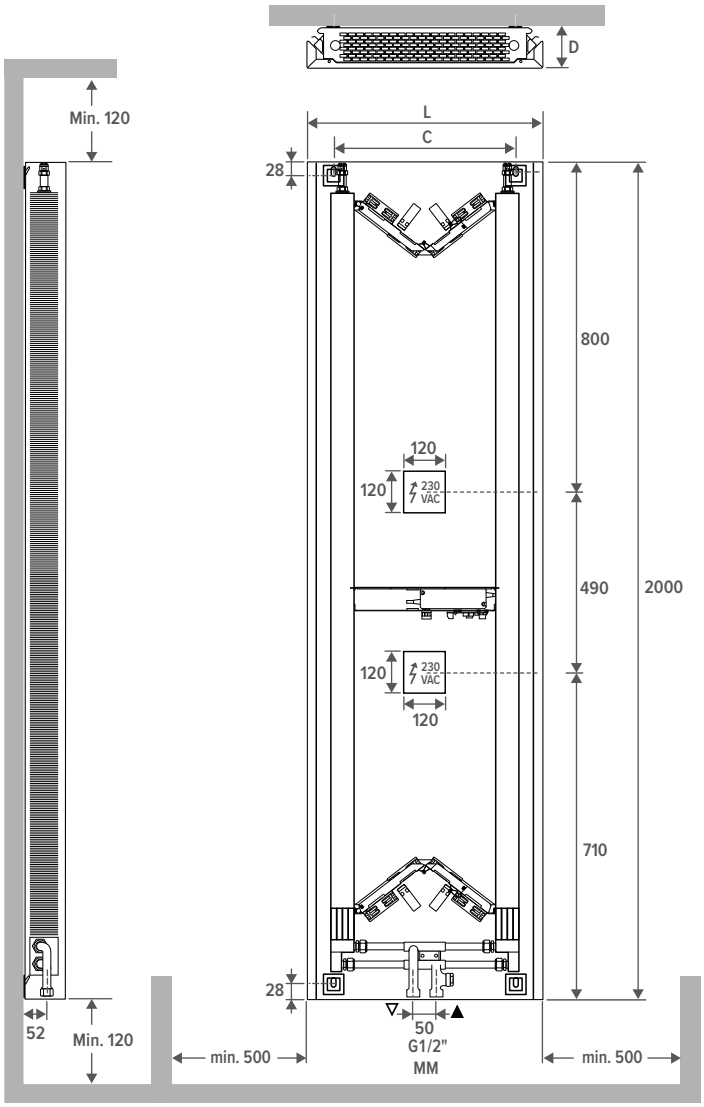


2 CORROSION-FREE LOW-H2O HEAT EXCHANGERS in copper/aluminium

MM CONNECTION to the wall

VERTIGA HYBRID

DIMENSIONS *(in mm)*



	TYPE 08			TYPE 12		
D	92			132		
L	410	520	650	530	700	900
C	206	316	446	278	448	648

ORDER CODE

VERW 200 041 08 XXX DDD

- Control:
  - Jaga 3 settings controller: D05
  - Jaga BMS (0-10V in) control: D03
- Colour
- Type
- Length
- Height

STANDARD DELIVERY

- front panel can be clicked in easily
- fully pre-assembled wall cassette with vertical grilles for air outlet at the left and right side
- pencil-proof intake openings on the top and bottom
- pre-perforated openings for electrical cabling
- central connection MM (MM Bottom or Top)

COLOURS

Standard colours

- traffic white RAL 9016 (133), soft touch lightly structured satin lacquer
- sandblast grey (001), fine texture metallic lak
- off-black (145), soft touch lightly-textured satin lacquer

Other colours

see Jaga colour chart

CONNECTION

Standard

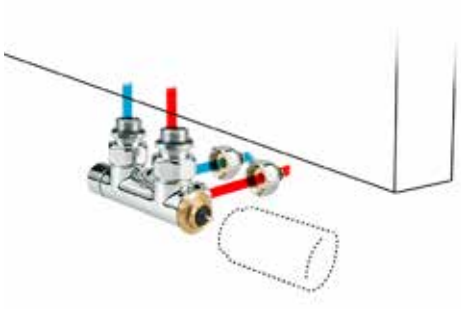
universal bottom connection MM, supply right

Top connection

the radiator is symmetrical and can be mounted either way up, provide an air vent on the central heating pipework above the radiator

CONNECTION POSSIBILITIES

To the wall



set 41 **two pipe: KVS 1.65**
one pipe: KVS: 2.20

Heating *

CODE PW3 AC 1...	AC	
CODE PW3 AW 1...	AW	
CODE PW3 AS 1...	AS	
CODE PW3 AB 1...	AB	

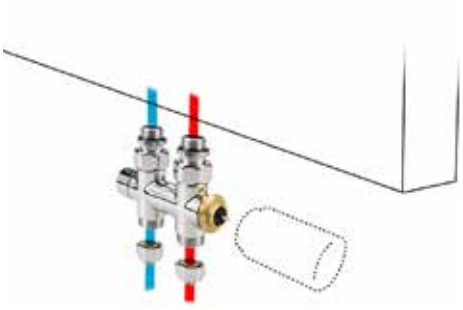
Heating and cooling

CODE PW3 HC 1...	HC	

fill in sleeve coupling code

CONNECTION POSSIBILITIES

To the floor



set 42 **two pipe: KVS 1.65**
one pipe: KVS: 2.20

Heating *

CODE PF3 AC 1...	AC	
CODE PF3 AW 1...	AW	
CODE PF3 AS 1...	AS	
CODE PF3 AB 1...	AB	

Heating and cooling

CODE PF3 HC 1...	HC	

fill in sleeve coupling code

Sleeve coupling codes M24

PRECISION METAL TUBE	
CODE	*Tube Ø*
112	12/1
114	14/1
115	15/1
116	16/1
118	18/1

SYNTHETIC	
CODE	*Tube Ø*
212	12/2
219	16/1.5
216	16/2
217	17/2
218	18/2

RPE/ALU	
CODE	*Tube Ø*
314	14/2
316	16/2
326	16/2.2
318	18/2

STEEL TUBE FOR C.H.	
CODE	*Tube Ø*
501	M24 x 1/2"
503	M24 x 3/8"

** Also suited for Light Cooling when combined with adaptor 5090 1114.*

CONTROLS

CONTROL PANEL

TYPE	POSITION	CONTROL PANEL	EXTERNAL 0-10 V CONTROL	2-PIPE	WATER TEMPERATURE SENSOR	AIR TEMPERATURE SENSOR
Jaga BMS (0-10V in) control (D05)		-	✓	✓	✓	-
Jaga 3 settings controller (D03)		✓	-	✓	✓	-

NO JAGA CONTROL SYSTEM

- Upon request for cold or heat, a BMS/home automation system or a JAGA termostat will open the thermoelectric valve.
- Upon request for cold or heat, a BMS/home automation system or a JAGA termostat will send a 0-10 VDC signal. The fan will rotate proportionally to the 0-10 VDC signal.

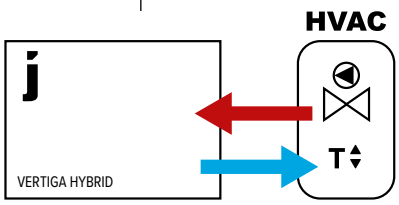
JAGA BMS 0-10V CONTROL

- Upon request for cold or heat, a BMS/home automation system or a JAGA termostat will open the thermoelectric valve.
- When heat or cold is requested, a BMS/home automation system or JAGA thermostat will transmit a 0-10V signal.
- When the fan recognises cold (<18°C) or hot (>28°C) water, it will rotate proportionally of the 0-10V signal

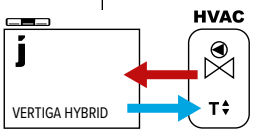
JAGA 3 SETTINGS CONTROLLER

- When heat or cold is requested, an external signal (thermostat, BMS/home automation, ...) a thermal engine.
- Heating: The fan will rotate at a fixed speed once the water has reached the setting of 28°C.
- Cooling: he fan will rotate at a fixed speed once the water has reached the setting of 18°C.
- The user manually selects the desired mode via the control panel / / OFF. The unit can run at 3 speeds. The unit starts at the last selected speed(1, 2 or 3) when the preset water temperature is reached.

Unit without integrated room temperature control
Fans will start automatically when the external control sends warm/ cold water through the radiator



Without 0-10V signal:
- room thermostat (None-Jaga)
- area control with room temperature control
- boiler or heat pump control with room temperature control
- home automation with room temperature control
- other external room temperature controls

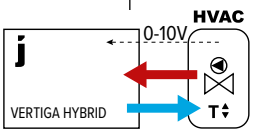


Choose 1 of 3 fan speeds (speed will not adjust, depending on room temperature)

JAGA 3 SETTINGS CONTROLLER

Coding: D05

0-10V signal for fan control available from
- Jaga room thermostat with 0-10V signal to unit
- home automation with 0-10V signal to unit



Fan speed is controlled by 0-10V connection to the electronics in the radiator.

JAGA BMS

D03

Fan speed is controlled by 0-10V connection to electronics outside the radiator.

NO CONTROL SYSTEM

/

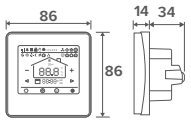
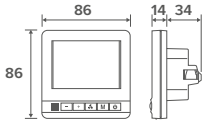
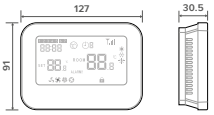
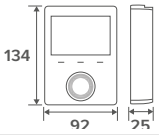
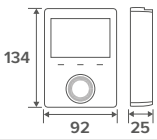
VERTIGA HYBRID

	HEIGHT	LENGTH	TYPE	POSITION	COOLING (non-condensing) Room temperature 27°C	HEATING Room temperature 20°C				SOUND PRESSURE LEVEL	POWER CONSUMPTION	ORDER CODE
	H	L	T		16/18	35/30	45/40	50/45	55/45	75/65			
	cm	cm			Watts	Watts	Watts	Watts	Watts	Watts	dB(A)	Watts	
VERW	**200**	**041**	**08**	1	127	325	591	724	784	1315	26.0	8.1	VERW 200 041 08 XXX DDD
				2	154	359	652	797	864	1449	30.0	8.7	
				3	178	401	728	892	966	1620	33.3	9.0	
		052	**08**	1	151	353	642	786	852	1428	26.0	10.1	VERW 200 052 08 XXX DDD
				2	180	404	734	899	974	1633	30.0	10.9	
				3	237	566	1029	1260	1365	2289	36.6	13.1	
		065	**08**	1	180	406	738	903	979	1641	26.0	10.6	VERW 200 065 08 XXX DDD
				2	210	463	842	1030	1116	1872	30.0	13.6	
				3	304	753	1368	1674	1814	3042	39.9	17.8	
	200	**053**	**12**	1	230	508	924	1130	1225	2054	26.0	9.2	VERW 200 053 12 XXX DDD
				2	281	587	1067	1306	1416	2374	30.0	9.9	
				3	410	724	1315	1610	1744	2925	38.7	11.7	
		070	**12**	1	477	728	1322	1618	1754	2941	26.0	14.0	VERW 200 070 12 XXX DDD
				2	578	942	1712	2096	2271	3808	30.0	16.0	
				3	918	1079	1961	2400	2601	4362	40.8	19.3	
		090	**12**	1	717	856	1556	1905	2064	3461	26.0	19.8	VERW 200 090 12 XXX DDD
				2	859	1177	2139	2618	2838	4758	30.0	22.7	
				3	1464	1387	2520	3085	3343	5605	40.8	27.9	

Output measured in accordance with EN 16430
**Noise measurement according to ISO 3741:2010, at a 2-m distance from the unit and with an assumed room attenuation of 8 dB(A)/room volume 100 m³ / reverberation time 0.5 sec.*

Enter colour code
Enter control system code

JRT-100 TB BLACK	JRT-100 TW WHITE	JRT-100	JRT-200 W	RDG 260T	RDG264KN
					
8751 050019	8751 050017	8751 050012	8751 050021	8751 050020	8751 050018

	JRT-100 TB / TW	JRT-100	JRT-200 W	RDG 260T	RDG264KN
POWER SUPPLY					
supply voltage	24V DC	24V DC	24V DC	24V DC	24V DC
OUTPUT / INPUT VOLTAGE					
valve 24V DC contact	2 (NO)	2 (NO)	2	-	-
potential-free contact	-	-	-	3 (NO)	3 (NO)
input from keycard	-	-	-	✓	✓
input from window contact	-	-	-	✓	✓
fan (0 - 10 V DC)	max. +/- 10 mA	max. +/- 10 mA	max. +/- 10 mA	max. +/- 5 mA	max. +/- 5 mA
manual 3-position speed controller	✓	✓	✓	✓	✓
automatic mode	✓	✓	✓	✓	✓
APPLICATIONS					
2-pipe					
manual (H/C)	✓	✓	✓	✓	✓
auto (H/C) - water temperature sensor required	-	-	-	✓	✓
4-pipe					
manual (H/C)	✓	✓	✓	✓	✓
auto (H/C)	✓	✓	✓	✓	✓
DIMENSIONS					
for wall mounting	-	-	✓	✓	✓
for recessed-mounting	✓	✓	optional	optional	optional
					
POSITION					
LCD display with backlight	-	✓	✓	✓	✓
LCD touch screen with backlight	✓	-	-	-	-
protection category IP20	-	-	✓	-	-
protection category IP30	✓	✓	-	✓	✓
Integrated CO2-sensor	-	-	-	-	✓
humidity sensor	-	-	-	-	✓
FEATURES					
programmable time zones	✓	✓	✓	✓	✓
control via Wi-Fi (smartphone app)	✓	-	✓	-	-
fan start delay	-	-	-	✓	✓
continuous fan speed	-	-	-	✓	✓
temperature sensor 80 cm	✓	✓	optional	optional	optional

With these template schedules for thermostat or home automation systems, Jaga strives to simplify the installation process for you. Make sure to perfectly align power supply, thermostatic valve mounting, controls, pipe system, temperature monitoring and number of units per area.

Here, you can find the most common combinations. Feel free to ask for more variations at info@jaga.com.

1. POWER SUPPLY

Option 1: integrated power supply (inside the unit)

Option 2: power supply DIN-rail assembly (outside the unit)

2. THERMOSTATIC VALVE

Option 1: on the collector (outside the unit)

3. CHOICE OF THERMOSTAT

Option 1: thermostat JRT-100TW

Option 2: thermostat JRT-100

Option 3: thermostat JRT-200

Option 4: thermostat RDG160T

Option 5: home automation

4. HYDRONIC

Option 1: two-pipe system

5. TEMPERATURE MONITORING

Option 1: with temperature monitoring

6. UNITS / ZONE

Option 1: one unit

Option 2: multiple units

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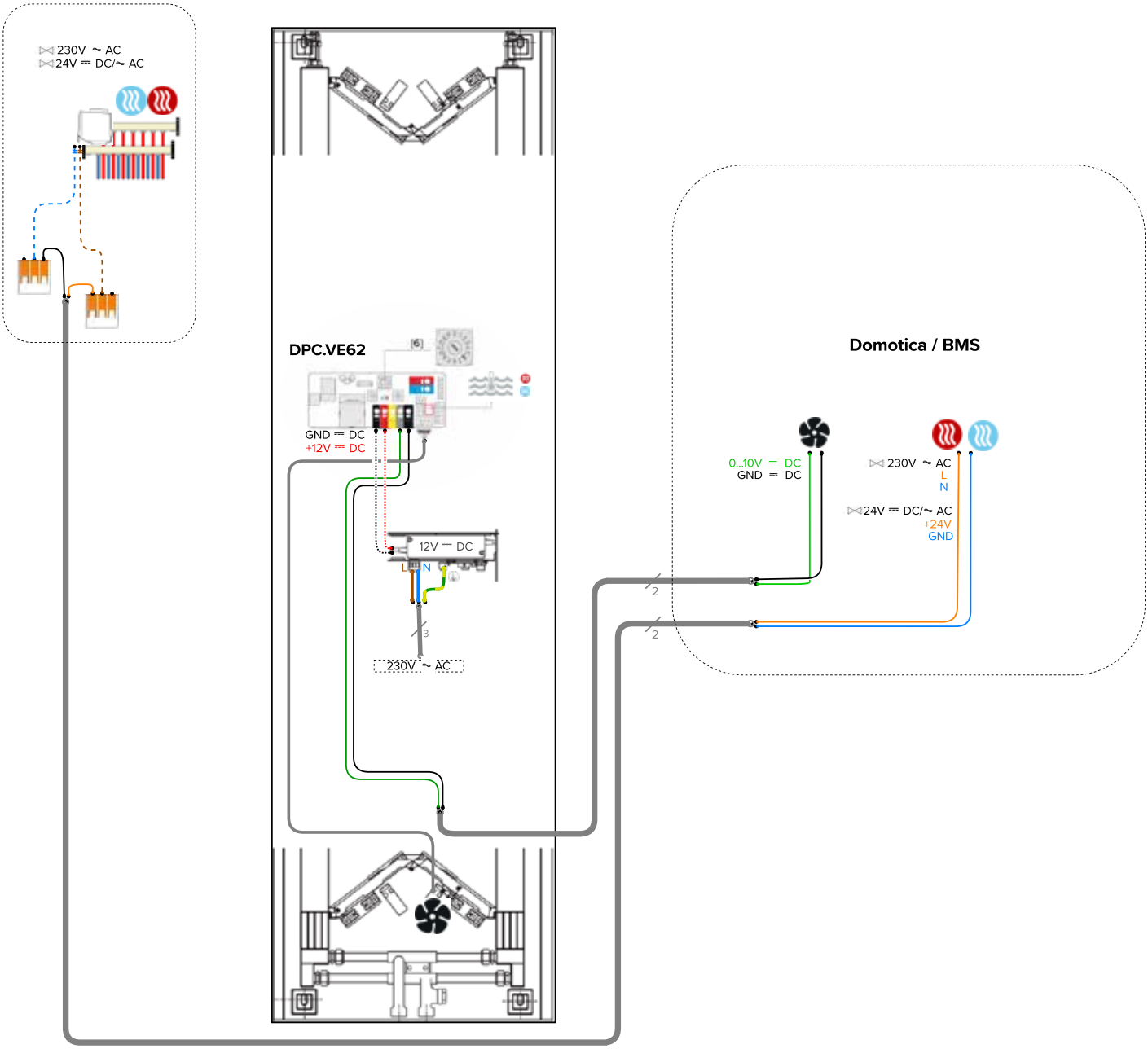
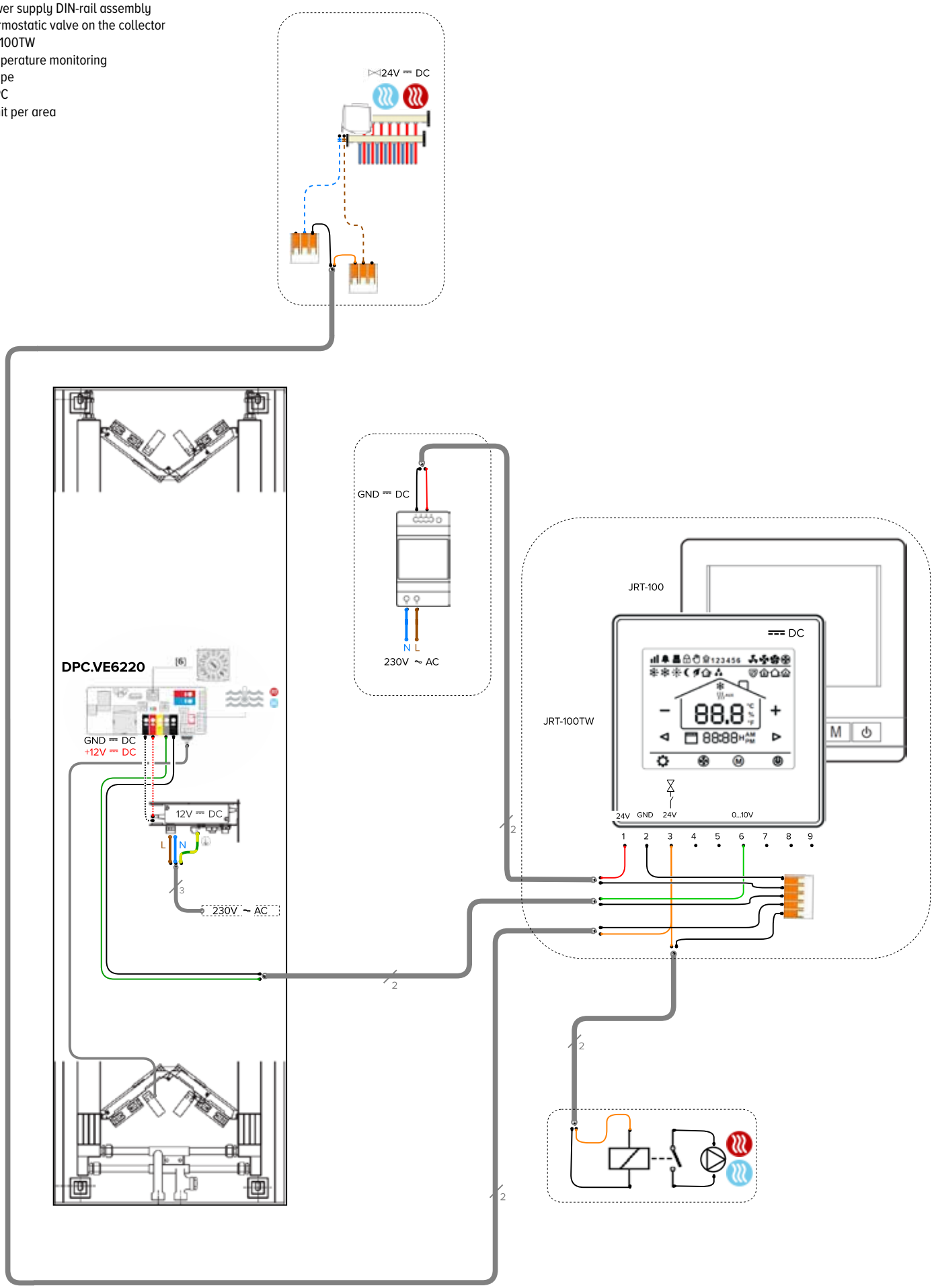
SAMPLE DIAGRAM 1

- integrated power supply
- thermostatic valve on the collector
- BMS
- 2-pipe
- temperature monitoring
- 1 unit per area



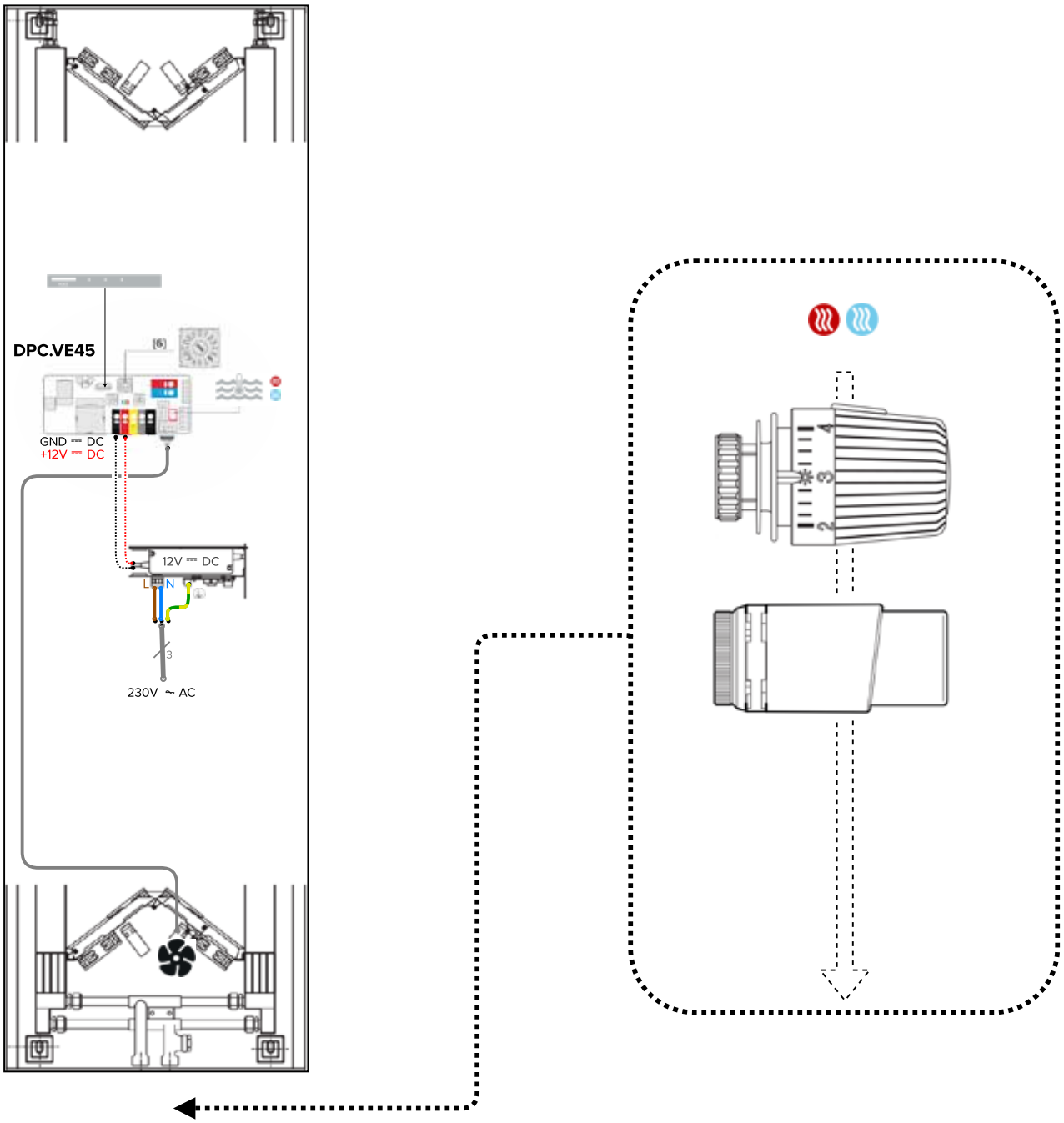
- power supply DIN-rail assembly
- thermostatic valve on the collector
- JRT100TW
- temperature monitoring
- 2-pipe
- JDPC
- 1 unit per area



VERTIGA HYBRID

SAMPLE DIAGRAM 3

- integrated power supply
- thermostatic valve inside the unit
- BMS
- 2-pipe
- temperature monitoring
- JDPC
- 1 unit per area



The indicated outputs at ΔT 50 are exact values measured in accordance with EN16430. This table provides a calculated value using an average correction factor for all other ΔT outputs, valid for all dimensions.

Click *www.jaga.com/selection-tools/* to download the calculation tools with the exact outputs. The online calculation tools are kept up to date with the most recent data. Minor output differences between printed tables and the different online calculation tools are therefore completely normal and within the margins of tolerance imposed by the standard.

AVERAGE CORRECTION FACTORS DYNAMIC PRODUCTS - 75/65/20°C

room temperature: 20°C **Average N-value: 1.00**

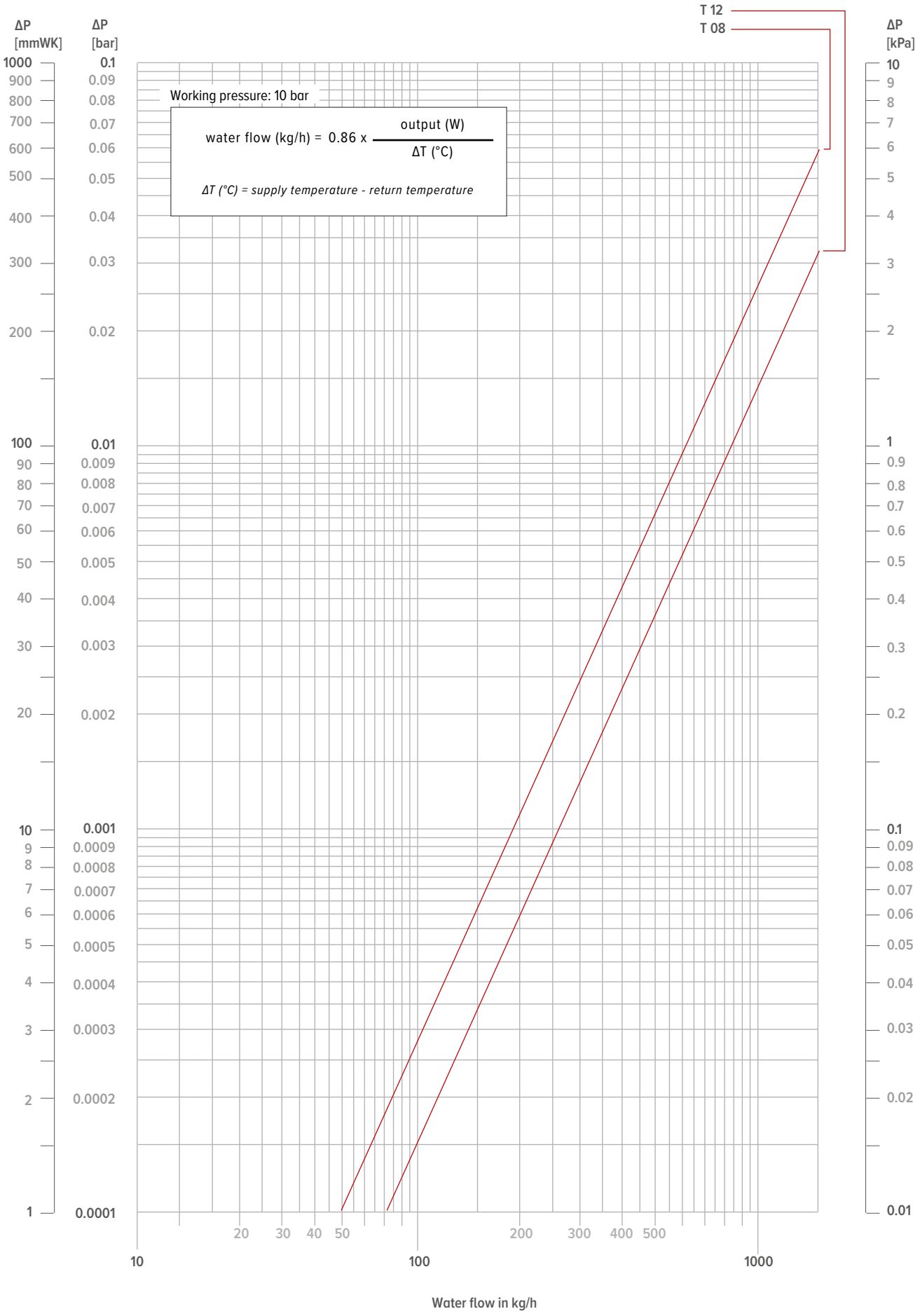
	TR 65	60	55	50	45	40	35	30	25
TA									
75	1.00	0.95	0.89	0.83	0.76	0.69	0.62	0.53	0.42
70	0.95	0.90	0.84	0.79	0.72	0.66	0.58	0.50	0.39
65		0.85	0.80	0.74	0.68	0.62	0.55	0.47	0.37
60			0.75	0.70	0.64	0.58	0.51	0.43	0.34
55				0.65	0.60	0.54	0.47	0.40	0.31
50					0.55	0.49	0.43	0.37	0.28
45						0.45	0.39	0.33	0.25
40							0.35	0.29	0.22
35								0.25	0.18
30									0.14

room temperature: 24°C **Average N-value: 1.00**

	TR 65	60	55	50	45	40	35	30	25
TA									
75	0.92	0.86	0.81	0.74	0.68	0.61	0.52	0.42	0.26
70	0.87	0.82	0.76	0.70	0.64	0.57	0.49	0.39	0.24
65		0.77	0.72	0.66	0.60	0.53	0.46	0.37	0.22
60			0.67	0.62	0.56	0.49	0.42	0.34	0.20
55				0.57	0.52	0.46	0.39	0.31	0.18
50					0.47	0.41	0.35	0.27	0.15
45						0.37	0.31	0.24	0.13
40							0.27	0.20	0.11
35								0.17	0.08
30									0.06

GUIDELINE FOR LIMITING FLOW NOISE

TUBE	outer Ø	Wall thick-ness	Max. water speed (EN10255)	water content per metre	max. water flow	Maximum power at ΔT (° C) (T supply - T return) ΔT 30	ΔT 20	ΔT 10	ΔT 5	ΔT 4	ΔT 3	ΔT 2
	mm	*mm*	*m/s*	*l*	*kg/h*	*Watts*	*Watts*	*Watts*	*Watts*	*Watts*	*Watts*	*Watts*
GALVANISED PIPE DIN 2440												
3/8 DN10 OD	17.2	2.35	0.40	0.12	173	6028	4019	2009	1005	804	603	402
1/2 DN15 OD	21.3	2.65	0.40	0.20	288	10046	6698	3349	1674	1340	1005	670
3/4 DN20 OD	26.9	2.65	0.42	0.37	559	19515	13010	6505	3253	2602	1952	1301
1 DN25 OD	33.7	3.25	0.49	0.58	1023	35690	23793	11897	5948	4759	3569	2379
1 1/4 DN32 OD	42.4	3.25	0.60	1.01	2182	76101	50734	25367	12684	10147	7610	5073
1 1/2 DN40 OD	48.3	3.25	0.66	1.37	3255	113549	75700	37850	18925	15140	11355	7570
2 DN50 OD	60.3	3.65	0.80	2.21	6365	222025	148017	74008	37004	29603	22203	14802
PRECISION METAL TUBE												
10/1	10	1.00	0.40	0.05	72	2512	1674	837	419	335	251	167
12/1	12	1.00	0.40	0.08	115	4019	2679	1340	670	536	402	268
14/1	14	1.00	0.40	0.11	158	5526	3684	1842	921	737	553	368
15/1	15	1.00	0.40	0.13	187	6530	4353	2177	1088	871	653	435
16/1	16	1.00	0.40	0.15	216	7535	5023	2512	1256	1005	753	502
18/1	18	1.00	0.40	0.20	288	10046	6698	3349	1674	1340	1005	670
22/1	22	1.00	0.40	0.31	446	15572	10381	5191	2595	2076	1557	1038
28/1	28	1.00	0.47	0.53	904	31522	21014	10507	5254	4203	3152	2101
RPE/ALU												
12/2	12	2.00	0.40	0.05	72	2512	1674	837	419	335	251	167
14/2	14	2.00	0.40	0.08	115	4019	2679	1340	670	536	402	268
16/1.5	16	1.50	0.40	0.13	187	6530	4353	2177	1088	871	653	435
16/2	16	2.00	0.40	0.11	158	5526	3684	1842	921	737	553	368
17/2	17	2.00	0.40	0.13	187	6530	4353	2177	1088	871	653	435
18/2	18	2.00	0.40	0.15	216	7535	5023	2512	1256	1005	753	502
20/2	20	2.00	0.40	0.20	288	10046	6698	3349	1674	1340	1005	670
26/3	26	3.00	0.40	0.31	446	15572	10381	5191	2595	2076	1557	1038
32/3	32	3.00	0.47	0.53	904	31522	21014	10507	5254	4203	3152	2101
40/3.5	40	3.50	0.56	0.86	1726	60220	40147	20073	10037	8029	6022	4015
50/4.25	50	4.25	0.66	1.35	3206	111824	74549	37275	18637	14910	11182	7455
63/5	63	5.00	0.80	2.21	6346	221359	147573	73786	36893	29515	22136	14757


ΔP [mmWK]
ΔP [bar]
ΔP [kPa]
T 12
T 08
Working pressure: 10 bar
water flow (kg/h) = 0.86 x output (W) / ΔT (°C)
ΔT (°C) = supply temperature - return temperature
1000 900 800 700 600 500 400 300 200 100 90 80 70 60 50 40 30 20 10 9 8 7 6 5 4 3 2 1
0.1 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0.009 0.008 0.007 0.006 0.005 0.004 0.003 0.002 0.001 0.0009 0.0008 0.0007 0.0006 0.0005 0.0004 0.0003 0.0002 0.0001
10 9 8 7 6 5 4 3 2 1 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01
10 20 30 40 50 100 200 300 400 500 1000
Water flow in kg/h

VERTIGA HYBRID

DEW POINT AIR BY AIR TEMPERATURE AND AIR HUMIDITY AT AIR PRESSURE 1013 HPA
LOWER LIMIT WATER TEMPERATURE 'LIGHT COOLING'

AIR TEMPERATURE (°C)	RELATIVE AIR HUMIDITY (%)					
	40	50	60	70	80	90
20	6.0	9.3	12.0	14.4	16.4	18.3
21	6.9	10.2	12.9	15.3	17.4	19.3
22	7.8	11.1	13.9	16.3	18.4	20.3
23	8.7	12.0	14.8	17.2	19.4	21.3
24	9.6	12.9	15.8	18.2	20.3	22.3
25	10.5	13.9	16.7	19.1	21.3	23.2
26	11.4	14.8	17.6	20.1	22.3	24.2
27	12.2	15.7	18.6	21.1	23.3	25.2
28	13.1	16.6	19.5	22.0	24.2	26.2
29	14.0	17.5	20.4	23.0	25.2	27.2
30	14.9	18.4	21.4	23.9	26.2	28.2
31	15.8	19.4	22.3	24.9	27.1	29.2
32	16.7	20.3	23.3	25.8	28.1	30.2
33	17.6	21.2	24.2	26.8	29.1	31.1
34	18.5	22.1	25.1	27.8	30.1	32.1
35	19.4	23.0	26.1	28.7	31.0	33.1

If a unit is not equipped with a connected condensate drain, it must be ensured that condensation does not form on the heat exchanger within the unit. This is particularly applicable to Jaga 'light cooling' units. To prevent condensation, the water temperature must be higher than the dew point of the air in which the unit operates. This table shows the minimum water temperature required for a unit to function without condensation forming.