Hoval Thermalia® twin
Hoval Thermalia® twin H

Brine/water-water/water heat pump

- Brine/water-water/water heat pump with two output stages for indoor installation
- Compact unit with high energy efficiency
- Extremely low-noise with triple-mounted construction
- Stable framework of galvanised sheet steel; with removable, powder-coated, sound-insulated side panels, colour brown red (RAL 3011)
- Sound-insulated plastic hood, colour flame red (RAL 3000)
- Temperatures and pressures of brine and refrigeration circuit available
- 2 spiral (scroll) compressors
- Electronic expansion valve
- Plate heat exchanger system of stainless steel
- Electronic starting current limiter with rotary field/phase monitoring for each compressor
- Integrated brine pressure monitoring
- Hydraulic connections to the rear
- Sound-insulating floor mat
- Refrigerant
  Thermalia® twin (20-42) with R410A
  Thermalia® twin H (13-22) with R134a
- Heat pump wired ready
- TopTronic® E controller installed

Electrical connections
- Connection to the rear

TopTronic® E controller

Control panel
- Colour touchscreen 4.3 inch
- Heat generator blocking switch for interrupting operation
- Fault signalling lamp

TopTronic® E control module
- Simple, intuitive operating concept
- Display of the most important operating statuses
- Configurable start screen
- Operating mode selection
- Configurable day and week programmes
- Operation of all connected Hoval CAN bus modules
- Commissioning wizard
- Service and maintenance function
- Fault message management
- Analysis function
- Weather display (with online HovalConnect)
- Adaptation of the heating strategy based on the weather forecast (with online HovalConnect)

Model range

Thermalia® twin type	Water/water 35 °C	Water/water 55 °C	Brine/water 35 °C	Brine/water 55 °C	Refrigerant	Max. flow °C	Heat output B0W35 kW	Heat output W10W35 kW
(20)	A+++	A+++	A+++	A++	R410A	62	20.4	27.3
(26)	A+++	A+++	A+++	A++	R410A	62	26.2	35.1
(36)	A+++	A+++	A+++	A+++	R410A	62	35.3	46.4
(42)	A+++	A+++	A+++	A++	R410A	62	42.0	55.4
H (13)	A+++	A+++	A+++	A++	R134a	67	12.3	17.0
H (19)	A+++	A+++	A+++	A++	R134a	67	18.0	24.7
H (22)	A+++	A+++	A+++	A++	R134a	67	20.9	28.8

Energy efficiency class of the compound system with control

TopTronic® E basic module heat generator TTE-WEZ
- Control functions integrated for
  - 1 heating/cooling circuit with mixer
  - 1 heating/cooling circuit without mixer
  - 1 hot water charging circuit
  - bivalent and cascade management
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- RAST 5 basic plug set

Options for TopTronic® E controller
- Can be expanded by max. 1 module expansion:
  - module expansion heating circuit or
  - module expansion heat balancing or
  - module expansion Universal
- Can be networked with a total of up to 16 controller modules:
  - heating circuit/hot water module
  - solar module
  - buffer module
  - measuring module

Number of modules that can be additionally installed in the heat generator:
- 1 module expansion and 1 controller module **or**
- 2 controller modules

The supplementary plug set must be ordered in order to use expanded controller functions.

Further information about the TopTronic® E
see “Controls”

EnergyManager PV smart
Feature to increase self-generated power consumption in use with HovalConnect.

If a HovalConnect gateway is used together with the heat pump, the EnergyManager PV smart feature is available. This allows the heat pump to be operated preferentially at times of higher solar radiation. The feature uses online weather data on the current solar radiation for this purpose and can be adjusted by means of an associated threshold value. The self-consumption of electricity from an existing photovoltaic plant is thus increased and the purchase of grid electricity is reduced. This results in a lasting and significant cost-saving potential without further investment costs for the customer

Delivery
- Heat pump on pallet, plastic hood and floor plate separately packed
- Flexible hoses included
- Sensor set separately packed

Brine/water-water/water heat pump

Hoval Thermalia® twin

Refrigerant R410A

Flow temperature max. 62 °C

Thermalia® twin type	Heat output B0W35 kW	W10W35 kW	Part No.
(20)	20.4	27.3	7018 990
(26)	26.2	35.1	7018 991
(36)	35.3	46.4	7018 992
(42)	42.0	55.4	7018 993

Hoval Thermalia® twin H

Refrigerant R410A

Flow temperature max. 67 °C

Thermalia® twin H type	Heat output B0W35 kW	W10W35 kW	Part No.
(13)	12.3	17.0	7018 994
(19)	18.0	24.7	7018 995
(22)	20.9	28.8	7018 996

Notice
Suitable heat source and charging pumps:

Hoval system pump set SPS-I with interface for pump control
Type 0-10 V or PWM1

Premium pump Stratos
with IF module Stratos Ext. Off (0-10 V)

See “Circulating pumps”

Electric heating elements
see “Calorifiers” - chapter “Electric heating elements”

Energy efficiency class
see Description

EnergyManager PV smart
Free feature to increase self-generated power consumption in use with HovalConnect.

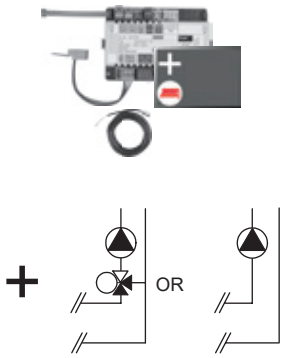
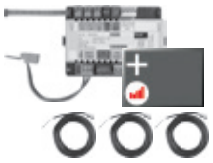
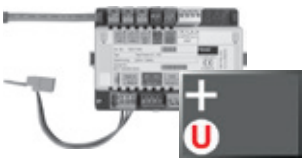
Further information
see “Description”

Hose set SPCH40-40-10-4 — 6058 823
for Thermalia® twin (20,26) and Thermalia® twin H (13,19)
Consisting of:
- 4 reinforced hoses PN 10 DN 40 1½″ IT insulated for brine and heating side flat-sealing with union nut
- Length: 1.0 m
- 4 brackets DN 40
- Seals

Hose set SPCH50-50-10-4 — 6058 824
for Thermalia® twin (36,42) and Thermalia® twin H (22)
Consisting of:
- 4 reinforced hoses PN 10 DN 50 2″ IT insulated for brine and heating side flat-sealing with union nut
- Length: 1.0 m
- 4 brackets DN 50
- Seals

TopTronic® E module expansions

for TopTronic® E basic module heat generator

		Part No.
	**TopTronic® E module expansion heating circuit TTE-FE HK** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit w/o mixer or - 1 heating/cooling circuit with mixer Consisting of: - Fitting accessories - 1 contact sensor ALF/2P/4/T, L = 4.0 m - Basic plug set FE module **Notice** The supplementary plug set may have to be ordered to implement functions differing from the standard!	6034 576
	**TopTronic® E module expansion heating circuit incl. energy balancing** TTE-FE HK-EBZ Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit w/o mixer or - 1 heating/cooling circuit with mixer incl. energy balancing in each case Consisting of: - Fitting accessories - 3 contact sensors ALF/2P/4/T, L = 4.0 m - Plug set FE module **Notice** Suitable flow rate sensors (pulse sensors) must be provided on site.	6037 062
	**TopTronic® E module expansion Universal TTE-FE UNI** Expansion to the inputs and outputs of a controller module (basic module heat generator, heating circuit/domestic hot water module, solar module, buffer module) for implementing various functions Consisting of: - Fitting accessories - Plug set FE module **Notice** Refer to the Hoval System Technology to find which functions and hydraulic arrangements can be implemented. **Further information** see “Controls” - “Hoval TopTronic® E module expansions” chapter	6034 575

Flow rate sensor sets

Plastic housing

Size	Connection inches	Flow rate l/min	Part No.
DN 8	G ¾″	0.9-15	6038 526
DN 10	G ¾″	1.8-32	6038 507
DN 15	G 1″	3.5-50	6038 508
DN 20	G 1¼″	5-85	6038 509
DN 25	G 1½″	9-150	6038 510

Brass housing

Size	Connection inches	Flow rate l/min	Part No.
DN 10	G 1″	2-40	6042 949
DN 32	G 1½″	14-240	6042 950
DN 40	G 2 ″	22-400	6055 092

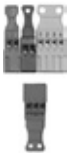
Hoval recommended use
Flow rate sensor set DN 40 made of brass. Installation location within the heat pump.

Notice
The flow rate sensor set must be installed without fail. Freezing can be prevented with the help of flow rate sensors and further technical measures. In order to protect the heat pump from frost in the event of a power failure or for example in bivalence mode, a system separation or other technical measures must be provided on site.

Accessories for TopTronic® E

TopTronic® E controller modules

		Part No.
TTE-HK/WW	TopTronic® E heating circuit/ hot water module	6034 571
TTE-SOL	TopTronic® E solar module	6037 058
TTE-PS	TopTronic® E buffer module	6037 057
TTE-MWA	TopTronic® E measuring module	6034 574



Supplementary plug set

	Part No.
for basic module heat generator TTE-WEZ	6034 499
for controller modules and module expansion TTE-FE HK	6034 503

TopTronic® E room control modules

		Part No.
TTE-RBM	TopTronic® E room control modules	
	easy white	6037 071
	comfort white	6037 069
	comfort black	6037 070

Enhanced language package TopTronic® E 6039 253

one SD card required per control module
Consisting of the following languages:
HU, CS, SL, RO, PL, TR, ES, HR,
SR, JA, DA

HovalConnect

	Part No.
HovalConnect LAN	6049 496
HovalConnect WLAN	6049 498
HovalConnect Modbus	6049 501
HovalConnect KNX	6049 593

TopTronic® E interface modules

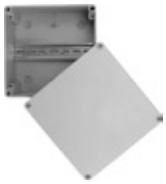
	Part No.
GLT module 0-10 V	6034 578

TopTronic® E sensors

		Part No.
AF/2P/K	Outdoor sensor H x W x D = 80 x 50 x 28 mm	2055 889
TF/2P/5/6T	Immersion sensor, L = 5.0 m	2055 888
ALF/2P/4/T	Contact sensor, L = 4.0 m	2056 775
TF/1.1P/2.5S/6T	Collector sensor, L = 2.5 m	2056 776

Bivalent switch

	Part No.
for various release or switching functions	
Bivalent switch 1-piece	2056 858
Bivalent switch 2-piece	2061 826



System housing

	Part No.
System housing 182 mm	6038 551
System housing 254 mm	6038 552

TopTronic® E wall casing

		Part No.
WG-190	Wall casing small	6052 983
WG-360	Wall casing medium	6052 984
WG-360 BM	Wall casing medium with control module cut-out	6052 985
WG-510	Wall casing large	6052 986
WG-510 BM	Wall casing large with control module cut-out	6052 987

Further information
see “Controls”

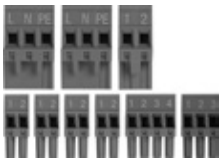
Accessories

Switching ball valve VBI60...L
DN 25-50, PN 16, 120 °C

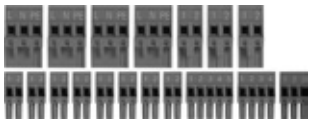
- Three-way ball valve made of brass with threaded connection
- Leakage rate: 0 ... 0.0001 % of kvs value
- Permitted media: cold water, cooling water, DHW, hot water, water with frost protection
- Recommendation: water treatment according to VDI 2035
- Media temperature: -10 ... 120 °C

DN	Connection inches	kvs m³/h	Part No.
25	Rp 1″	9	6052 444
32	Rp 1¼″	13	6052 445
40	Rp 1½″	25	6052 446
50	Rp 2″	37	6052 447

Motor drive GLB341.9E — 2070 331
For straight-way ball valves VAG60.. and switching ball valves VBI60.. DN 15..50
Operating voltage: 230 V, 50/60 Hz
Control signal 2-point/3-point
Single-wire/2 wire control
Operating time: 150 s
Nominal torque: 10 Nm
Permitted ambient temperature: -32 °C to +55 °C



Expansion connector set — 6032 509
for the automatic heat pump device ECR461
Use for additional function:
- Flow monitor
- Crankcase bottom heating
(included in the scope of delivery for Belaria® twin A, twin AR, dual AR)
- Condensation drain heating
- Heat quantity metering
Plugs:
- 1 230 V digital input
- 2 230 V outputs
- 4 low-voltage inputs
- 1 ratio. Input
- 1 4-pin low-voltage input



Universal plug set — 6032 510
for automatic heat pump device ECR461
Plugs:
- 3 digital 230 V inputs
- 4 230 V outputs
- 6 low-voltage inputs
- 2 low-voltage outputs
- 1 ratio. input
- 1 electronic expansion valve
- 1 4-pin low-voltage input

	Part No.
Necessary at boiler room temperatures < 10 °C	
 **Crankcase heater** for Belaria® twin I/IR (20-30), Thermalia® comfort (8-17), Thermalia® comfort H (7,10), Thermalia® twin (20-42), Thermalia® twin H (13-22) Necessary for heating room temperatures < 10 °C for protecting the compressor For Belaria® twin I/IR 2 pieces are necessary	6019 718
 **Instantaneous water heater kit DN 50** consisting of electrical box ready for connection for electrical protection incl. assembly fittings. for combination with all screw-in electric heating elements EP. Screw-in electric heating element must be ordered separately.	6044 070
 **System water protection filter** **FGM025...050 - 200** For horizontal installation in return for filtration of heating and cooling water, with high filtration capacity for corrosion particles and dirt without significant pressure drop. Consisting of: - Filter head and bowl in brass - Magnetic insert (nickel-neodymium) - 2 pressure gauges - Very large filter surface made of stainless steel - Filter fineness 200 µm - With drain valve - Connections Rp 1″ and Rp 2″: Internal thread with integrated shut-off valves and union connection (outlet) - Water temperature: max. 90 °C - incl. steam diffusion-tight insulating shells	
Notice Fulfills the function of sludge separator and strainer	
 **FF050 - 200** Casing and cover made of cast iron GGG-50 Cover with clip lock - Filter strainer insert made of stainless steel - Cover seal made of NBR - 2 magnetic insert (nickel-neodymium) - 2 pressure gauges - Very large filter surface in stainless steel - Filter fineness 200 µm - With filling and drain valve - Connections flange DN 50	

Type	Connection	Flow rate at Δp < 0.1 bar pressure drop m³/h	
FGM025	Rp 1″	5.5	6058 256
FGM025	Rp 2″	7.2	6058 257
FF050	DN 50	18.0	2076 376

Further strainers
see “Various system components”

Accessories

Vibration decoupler
for reducing structure-borne noise
from heat pumps in the indoor area
Consisting of:
- 1 vibration decoupler
insulated for heating side
flat-sealing with union nut
- 2 flat seals
Nominal pressure: PN 10

Dimension	Connection inches	Nominal length mm	Part No.
DN 25	1″	300	2082 222
DN 25	1″	500	2082 223
DN 25	1″	1000	2080 794
DN 32	1¼″	300	2082 224
DN 32	1¼″	500	2082 225
DN 32	1¼″	1000	2080 796
DN 40	1½″	500	2082 226
DN 40	1½″	1000	2080 798
DN 50	2″	500	2082 227
DN 50	2″	1000	2080 800

Accessories water/water

Safety group SG15-¾″ 2015 354
Retaining bar incl. safety valve,
pressure gauge, air vent and connection
fittings for expansion chambers

Diaphragm pressure expansion tank N 25/4 2078 741
for closed heating and cooling
water systems according to DIN EN 13831
Certification according to Pressure
Equipment Directive 2014/68/EU

- Durable epoxy resin coating
- Non-exchangeable half-diaphragm
according to DIN EN 13831
- Addition of antifreeze
min. 25 % to 50 %
- With threaded connections
System temperature max. 120 °C
Operating temperature: max. 70 °C
Colour: grey
Nominal volume: 25 l
Operating pressure: max. 4 bar
Ex-works gas inlet pressure: 1.5 bar
Connection: R ¾″
Diameter: 308 mm
Height: 477 mm
Weight: 4.3 kg

Ground water accessories

		Part No.
	**Brine filling station in compact design DN 25** with shut-off valves, filter and EPS insulation. Application temperatures: -20 °C to +60 °C Frost protection: max. 50 % Connections: DN 25 G 1″ Kvs: 12.5 m³/h Max. operating pressure: 1.0 MPa (10 bar) Dirt screen integrated	6037 537
	**Brine filling station in compact design DN 32** with shut-off valves, filter and EPS insulation. Application temperatures: -20 °C to +60 °C Frost protection: max. 50 % Connections: DN 32 G 1¼″ Kvs: 22 m³/h Max. operating pressure: 1.0 MPa (10 bar) Dirt screen integrated	6033 364
	**Float body flow meter** Bistable Reed contact as NC contact Area of application 1500-15000 l/h Temperature range 0-80 °C Nominal pressure: 10 bar Connection: Rp 2″ Pressure drop: 30 mbar Installation length: 335 mm Max. voltage: 230 V Max. continuous current: 0.2 A	2040 709
	**Ground water pump kit SB-GWP** for Thermalia® twin (20-42), twin H (13-22) Contactor for actuation of a 3-phase ground water pump. Ready to connect without thermal overload protection	6041 092

Services

Commissioning
Commissioning by works service or Hoval trained authorised serviceman/company is condition for warranty.

For commissioning and other services please contact your Hoval sales office.

Thermalia® twin (20-42) with R410A

Type		(20)	(26)	(36)	(42)
Brine/water application B0W35					
• Energy efficiency class of the compound system with control	35 °C/55 °C	A+++/A++	A+++/A++	A+++/A+++	A+++/A++
• Room heating energy efficiency “moderate climate” 35 °C ηS [1), 2)]	%	202	198	206	203
• Room heating energy efficiency “moderate climate” 55 °C ηS [1), 2)]	%	138	138	148	135
Water/water application W10W35					
• Energy efficiency class of the compound system with control	35 °C/55 °C	A+++/A+++	A+++/A+++	A+++/A+++	A+++/A+++
• Room heating energy efficiency “moderate climate” 35 °C ηS [1), 2)]	%	277	274	270	259
• Room heating energy efficiency “moderate climate” 55 °C ηS [1), 2)]	%	183	180	191	176
• Seasonal coefficient of performance moderate climate (brine) 35 °C /55 °C	SCOP	5.2/3.6	5.2/3.6	5.4/3.9	5.3/3.6
Max. performance data heating in acc. with EN 14511					
• Heat output B0W35	kW [3)]	20.4	26.2	35.3	42.0
• Coefficient of performance B0W35	COP	4.9	4.8	5.0	4.8
• Heat output W10W35	kW	27.3	35.1	46.4	55.4
• Coefficient of performance W10W35	COP	6.6	6.4	6.4	6.1
Nominal volume flow rate and resistance brine/water heat pump					
Heating (Δt = 7 K)	m^3/h	2.5	3.3	4.4	5.2
• ΔP Pressure drop condenser	kPa	5.3	7.3	5	5.3
Heat source (Δt = 3 K)	m^3/h	4.9	6.2	8.5	10.0
• ΔP Pressure drop evaporator	kPa	12	13	14	14
Nominal volume flow rate and resistance water/water heat pump					
Heating (Δt = 7 K)	m^3/h	3.4	4.3	5.7	6.8
• ΔP Pressure drop condenser	kPa	9.8	12.5	8.5	9.0
Heat source (Δt = 5 K) [4)]	m^3/h	4.0	5.0	6.8	8.0
• ΔP Pressure drop evaporator	kPa	5.0	5.5	6.5	6.0
Operating limit values		see diagrams of areas of application			
• Operating pressure max. water side	bar	6	6	6	6
• Operating pressure max. brine side	bar	6	6	6	6
• Installation place operation [5)]	°C (min./max.)	5/35	5/35	5/35	5/35
• Storage	°C (min./max.)	-15/50	-15/50	-15/50	-15/50
• Compressor, type		2 x spiral (scroll), hermetic			
• Refrigerant filling quantity (R410A)	kg	6.5	7.1	8.2	9.0
- Type of compressor oil: EMKARATE RL 32-3MAF					
• Condenser/evaporator		Plate heat exchanger			
• Material		Stainless steel V4A, AISI 316, 1.4401			
• Connections	R	1½″	1½″	2″	2″
• Piping connections with flex. connecting hose	Rp	1½″	1½″	2″	2″
Electrical data [6)]					
• Voltage	V	3~400	3~400	3~400	3~400
• Frequency	Hz	50	50	50	50
• Voltage range	V	380-420	380-420	380-420	380-420
• Max. compressor operating current	A	13.1	16.9	24.0	29.3
• Starting current with starting current limiter [7)]	A	25.4	32.7	44.5	55.1
• Principal current (external protection) with brine systems	A	16	20	32	32
- Type		C,D,K	C,D,K	C,D,K	C,D,K
• Principal current (external protection) with ground water systems	A	20	25	32	40
- Type		C,D,K	C,D,K	C,D,K	C,D,K
• Control current (external protection)	A	13	13	13	13
- Type		B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z
Weight					
• Operating weight approx.	kg	280	286	298	310

[1)] 2 % can be added for class II heat pump incl. control.

[2)] 4 % can be added for class IV heat pump incl. control and room thermostat.

[3)] kW = standard values according to EN 14511; values for B0W35 with 25 % monopolypropylene

[4)] ΔT in accordance with regional regulations. The temperature difference is adjustable from 3 to 6 kelvin. The pump regulates the volumetric current to the set temperature difference.

[5)] < 10 °C: Crankcase heater is necessary

[6)] Values for electrical data apply for supply voltage of 3~400 V

[7)] Effective value, operating current compressor 1 + starting current with starting current limiter

Thermalia® twin H (13-22) with R134a

Type		H (13)	H (19)	H (22)
Brine/water application B0W35				
• Energy efficiency class of the compound system with control	35 °C/55 °C	A+++/A++	A+++/A++	A+++/A++
• Room heating energy efficiency “moderate climate” 35 °C ηS [1), 2)]	%	181	175	183
• Room heating energy efficiency “moderate climate” 55 °C ηS [1), 2)]	%	127	132	133
Water/water application W10W35				
• Energy efficiency class of the compound system with control	35 °C/55 °C	A+++/A+++	A+++/A+++	A+++/A+++
• Room heating energy efficiency “moderate climate” 35 °C ηS [1), 2)]	%	225	226	239
• Room heating energy efficiency “moderate climate” 55 °C ηS [1), 2)]	%	170	172	178
• Seasonal coefficient of performance moderate climate (brine) 35 °C /55 °C	SCOP	4.7/3.4	4.6/3.5	4.9/3.5
Max. performance data heating in acc. with EN 14511				
• Heat output B0W35	kW [3)]	12.3	18.0	20.9
• Coefficient of performance B0W35	COP	4.5	4.4	4.6
• Heat output W10W35	kW	17.0	24.7	28.8
• Coefficient of performance W10W35	COP	5.7	5.6	5.9
Nominal volume flow rate and resistance brine/water heat pump				
Heating (Δt = 7 K)	m^3/h	1.6	2.3	2.7
• ΔP Pressure drop condenser	kPa	1.6	2.0	2.3
Heat source (Δt = 3 K)	m^3/h	2.9	4.2	4.9
• ΔP Pressure drop evaporator	kPa	4	5	6
Nominal volume flow rate and resistance water/water heat pump				
Heating (Δt = 7 K)	m^3/h	2.2	3.2	3.8
• ΔP Pressure drop condenser	kPa	3.1	3.9	4.4
Heat source (Δt = 5 K) [4)]	m^3/h	2.6	3.7	4.4
• ΔP Pressure drop evaporator	kPa	2.4	3.0	3.6
Operating limit values		see diagrams of areas of application		
• Operating pressure max. water side	bar	6	6	6
• Operating pressure max. brine side	bar	6	6	6
• Installation place operation [5)]	°C (min./max.)	5/35	5/35	5/35
• Storage	°C (min./max.)	-15/50	-15/50	-15/50
• Compressor, type		2 x spiral (scroll), hermetic		
• Refrigerant filling quantity (R134a)	kg	4.8	5.9	6.5
- Type of compressor oil: EMKARATE RL 32-3MAF				
• Condenser/evaporator		Plate heat exchanger		
• Material		Stainless steel V4A, AISI 316, 1.4401		
• Connections	R	2″	2″	2″
• Piping connections with flex. connecting hose	Rp	2″	2″	2″
Electrical data [6)]				
• Voltage	V	3~400	3~400	3~400
• Frequency	Hz	50	50	50
• Voltage range	V	380-420	380-420	380-420
• Max. compressor operating current	A	9.4	13.3	15.8
• Starting current with starting current limiter [7)]	A	21.7	27.1	37.4
• Principal current (external protection) with brine systems	A	16	16	20
- Type		C,D,K	C,D,K	C,D,K
• Principal current (external protection) with ground water systems	A	16	20	25
- Type		C,D,K	C,D,K	C,D,K
• Control current (external protection)	A	13	13	13
- Type		B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z
Weight				
• Operating weight approx.	kg	273	283	293

[1)] 2 % can be added for class II heat pump incl. control.

[2)] 4 % can be added for class IV heat pump incl. control and room thermostat.

[3)] kW = standard values according to EN 14511; values for B0W35 with 25 % monopolypropylene

[4)] ΔT in accordance with regional regulations. The temperature difference is adjustable from 3 to 6 kelvin. The pump regulates the volumetric current to the set temperature difference.

[5)] < 10 °C: Crankcase heater is necessary

[6)] Values for electrical data apply for supply voltage of 3~400 V

[7)] Effective value, operating current compressor 1 + starting current with starting current limiter

Thermalia® twin (20-42), twin H (13-22)

Sound emission

The effective sound pressure level [1] in the installation room depends on various factors such as room size, absorption capacity, reflection, free sound propagation, etc.

Therefore it is important that the installation room lies, if possible, outside the noise-sensitive range and is supplied with sound-absorbing doors.

Ducts and pipes must be fixed to walls and ceiling in a way that no structure-borne sound is being transmitted to the system.

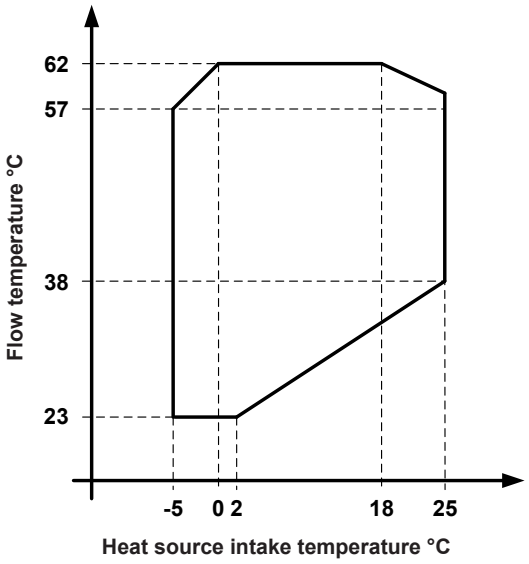
Thermalia® twin (20-42)		(20)		(26)		(36)		(42)	
Thermalia® twin H (13-22)		(13)		(19)		(22)			
Stage		1	2	1	2	1	2	1	2
Sound power level dB(A)	dB(A)	47	50	49	51	52	55	53	56
Sound pressure level dB(A) [1]	dB(A)	35	38	37	39	40	43	41	44

[1] Sound pressure level, distance 1 m (in standard room with approx. 5-6 dB(A) sound absorption)

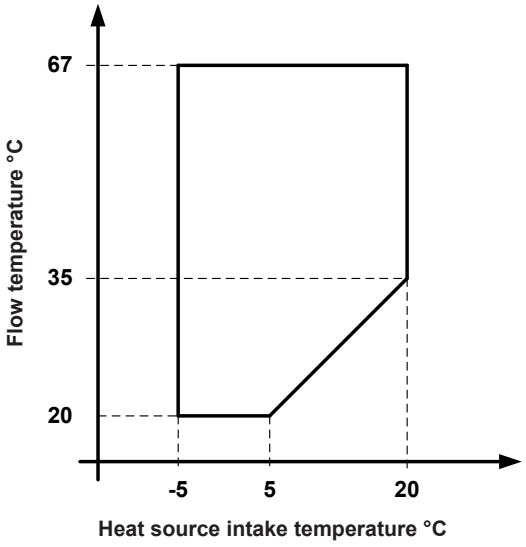
Diagrams of areas of application

Heating and hot water

Thermalia® twin (20-42)

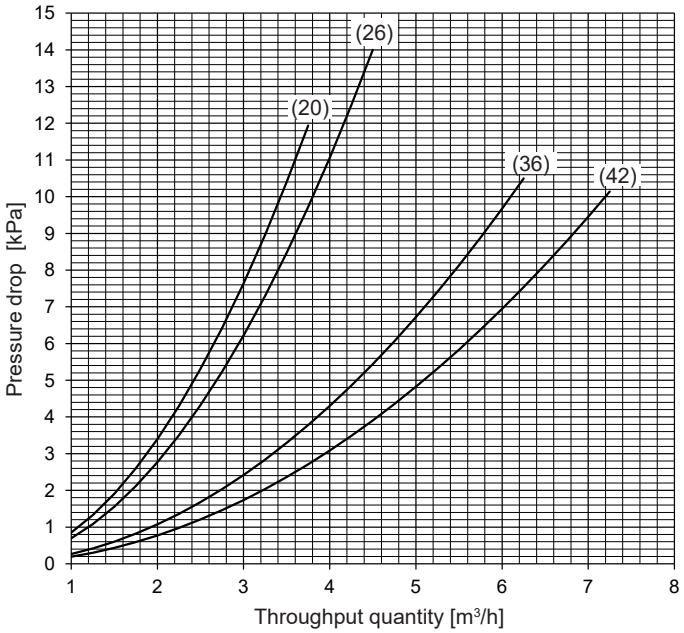


Thermalia® twin H (13-22)



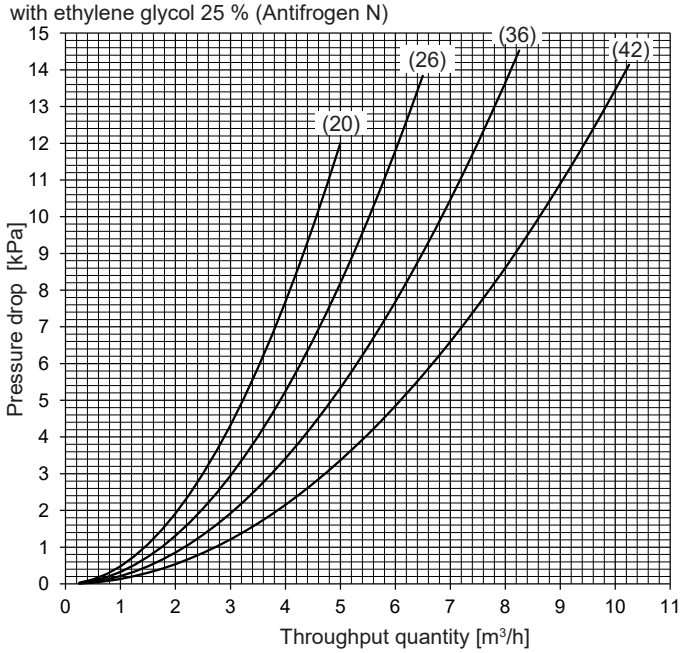
Thermalia® twin (20-42)
Heating

Pressure drop condenser with water



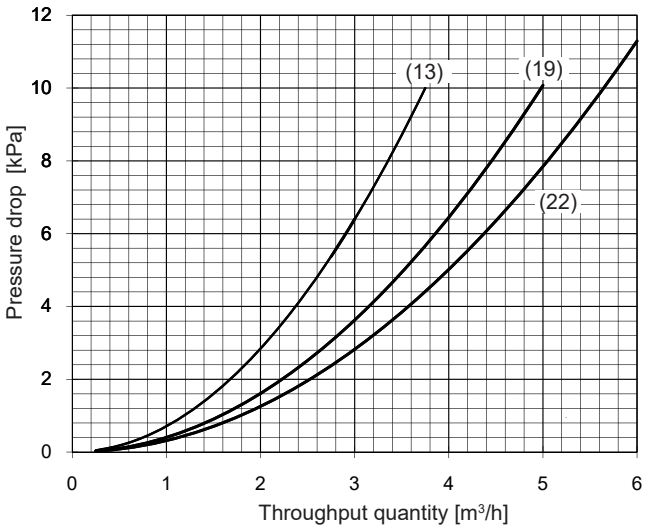
Heat source

Pressure drop evaporator
with ethylene glycol 25 % (Antifrogen N)



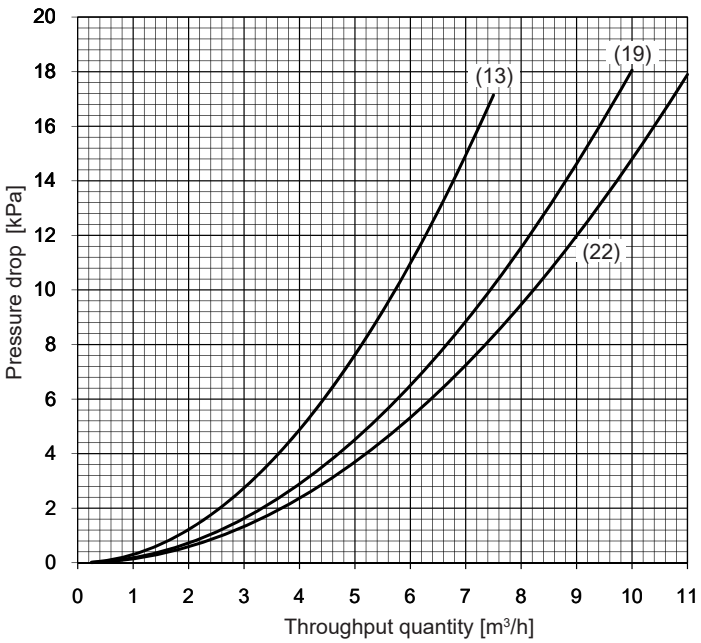
Thermalia® twin H (13-22)
Heating

Pressure drop condenser with water



Heat source

Pressure drop evaporator
with ethylene glycol 25 % (Antifrogen N)

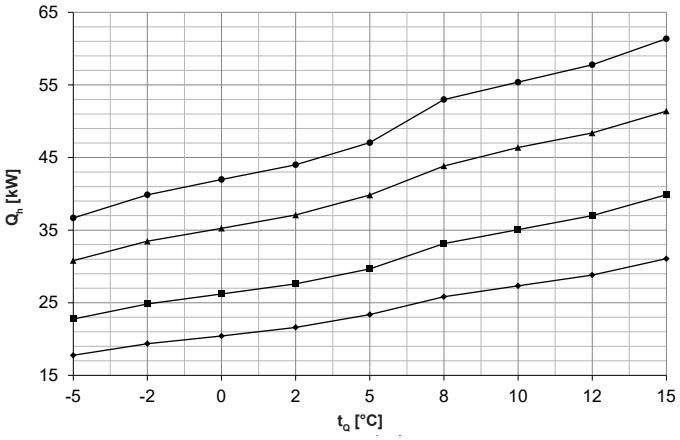


Performance data - heating

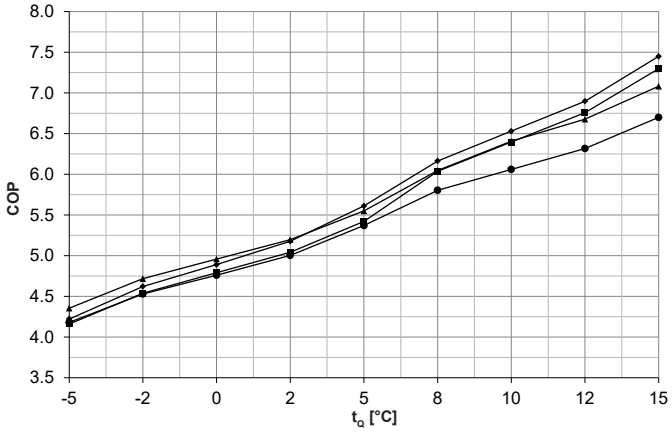
Maximum heat output

Thermalia® twin (20-42)

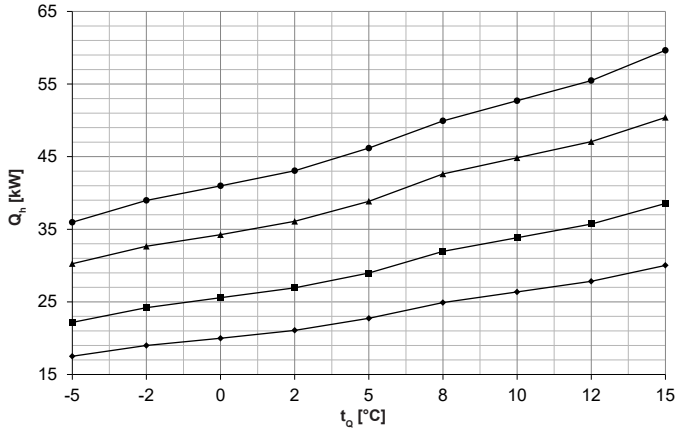
Heat output - t_{VL} 35 °C



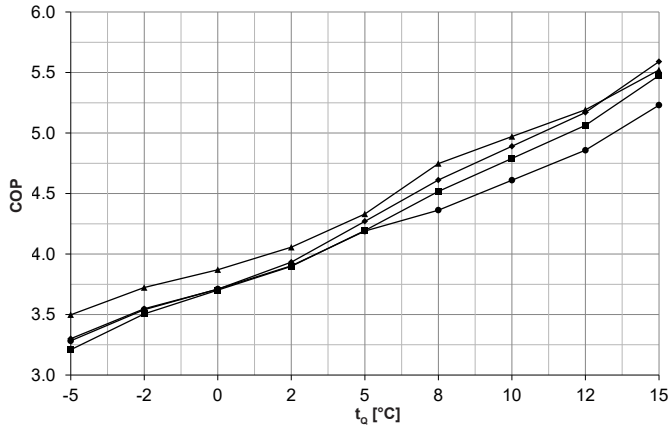
Coefficient of performance - t_{VL} 35 °C



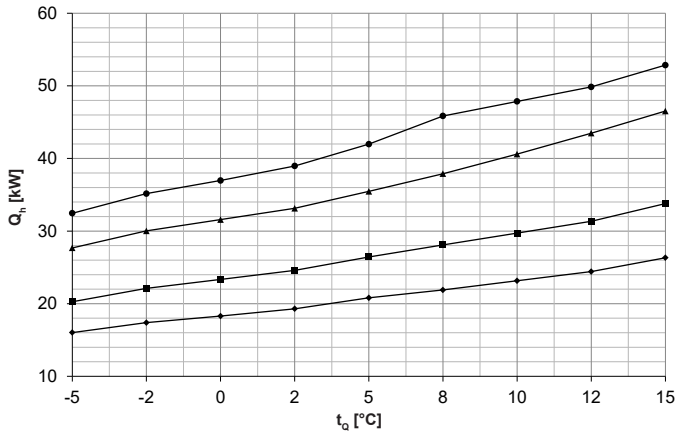
Heat output - t_{VL} 45 °C



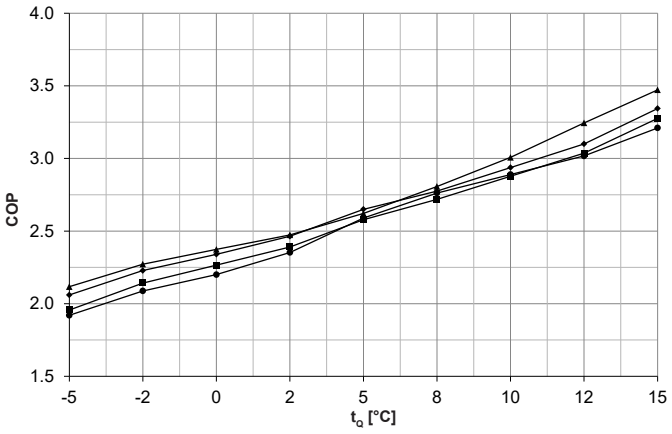
Coefficient of performance - t_{VL} 45 °C



Heat output - t_{VL} 60 °C



Coefficient of performance - t_{VL} 60 °C



t_{VL} = heating flow temperature (°C)
t_Q = source temperature (°C)
Q_h = heat output at full load (kW), measured in accordance with standard EN 14511
COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

- Thermalia® twin (20)
- Thermalia® twin (26)
- Thermalia® twin (36)
- Thermalia® twin (42)

Performance data - heating
Thermalia® twin (20-42)
Indications acc. to EN 14511

Type			(20)			(26)			(36)			(42)		
t_{VL} °C		t_Q °C	Q_h kW	P kW	COP	Q_h kW	P kW	COP	Q_h kW	P kW	COP	Q_h kW	P kW	COP
30	Brine	-5	18.1	3.7	4.9	23.3	4.9	4.8	31.4	6.3	5.0	36.8	7.9	4.7
		-2	19.8	3.7	5.3	25.4	4.9	5.2	34.2	6.3	5.4	40.3	7.9	5.1
		0	20.9	3.7	5.6	26.8	4.9	5.5	36.1	6.3	5.7	42.5	7.9	5.4
		2	22.0	3.7	6.0	28.2	4.8	5.8	38.0	6.3	6.0	44.8	7.9	5.7
		5	23.8	3.7	6.5	30.4	4.8	6.3	40.8	6.3	6.5	48.1	7.9	6.1
	Water	8	26.3	3.6	7.3	33.7	4.7	7.2	44.4	6.4	7.0	54.5	8.0	6.8
		10	27.8	3.6	7.8	35.7	4.7	7.6	47.2	6.4	7.4	56.7	8.0	7.1
		12	29.3	3.6	8.2	37.6	4.7	8.0	49.0	6.3	7.7	58.9	8.0	7.4
		15	31.6	3.6	8.9	40.5	4.7	8.7	51.9	6.3	8.2	62.2	8.0	7.7
35	Brine	-5	17.8	4.2	4.2	22.8	5.5	4.2	30.8	7.1	4.4	36.7	8.8	4.2
		-2	19.4	4.2	4.6	24.8	5.5	4.5	33.5	7.1	4.7	39.9	8.8	4.5
		0	20.4	4.2	4.9	26.2	5.5	4.8	35.3	7.1	5.0	42.0	8.8	4.8
		2	21.6	4.2	5.2	27.6	5.5	5.0	37.1	7.1	5.2	44.0	8.8	5.0
		5	23.4	4.2	5.6	29.7	5.5	5.4	39.8	7.2	5.6	47.0	8.8	5.4
	Water	8	25.8	4.2	6.2	33.1	5.5	6.0	43.8	7.3	6.1	53.0	9.1	5.8
		10	27.3	4.2	6.5	35.1	5.5	6.4	46.4	7.2	6.4	55.4	9.1	6.1
		12	28.8	4.2	6.9	37.0	5.5	6.8	48.4	7.2	6.7	57.8	9.1	6.3
		15	31.1	4.2	7.5	39.9	5.5	7.3	51.4	7.3	7.1	61.4	9.2	6.7
40	Brine	-5	17.6	4.8	3.7	22.5	6.2	3.6	30.5	7.9	3.9	36.3	9.9	3.7
		-2	19.2	4.8	4.0	24.5	6.2	4.0	33.1	7.9	4.2	39.4	9.9	4.0
		0	20.2	4.8	4.2	25.9	6.2	4.2	34.8	8.0	4.4	41.5	9.9	4.2
		2	21.3	4.8	4.5	27.3	6.2	4.4	36.6	8.0	4.6	43.5	9.9	4.4
		5	23.0	4.7	4.9	29.3	6.2	4.7	39.3	8.1	4.9	46.6	9.9	4.7
	Water	8	25.4	4.8	5.3	32.6	6.3	5.2	43.2	8.1	5.3	51.5	10.3	5.0
		10	26.8	4.8	5.6	34.5	6.3	5.5	45.6	8.1	5.6	54.0	10.3	5.3
		12	28.3	4.8	5.9	36.4	6.3	5.8	47.7	8.2	5.9	56.6	10.3	5.5
		15	30.5	4.8	6.4	39.2	6.3	6.3	50.9	8.2	6.2	60.5	10.3	5.9
45	Brine	-5	17.5	5.3	3.3	22.2	6.9	3.2	30.3	8.7	3.5	36.0	11.0	3.3
		-2	19.0	5.4	3.6	24.2	6.9	3.5	32.7	8.8	3.7	39.0	11.0	3.5
		0	20.0	5.4	3.7	25.6	6.9	3.7	34.3	8.9	3.9	41.0	11.0	3.7
		2	21.1	5.4	3.9	26.9	6.9	3.9	36.1	8.9	4.1	43.1	11.0	3.9
		5	22.7	5.3	4.3	29.0	6.9	4.2	38.9	9.0	4.3	46.2	11.0	4.2
	Water	8	24.9	5.4	4.6	32.0	7.1	4.5	42.6	9.0	4.8	49.9	11.4	4.4
		10	26.4	5.4	4.9	33.8	7.1	4.8	44.8	9.0	5.0	52.7	11.4	4.6
		12	27.8	5.4	5.2	35.7	7.1	5.1	47.1	9.1	5.2	55.5	11.4	4.9
		15	30.0	5.4	5.6	38.5	7.0	5.5	50.4	9.1	5.5	59.6	11.4	5.2
50	Brine	-5	17.0	6.0	2.8	21.8	7.8	2.8	29.6	9.6	3.1	34.5	12.5	2.8
		-2	18.4	6.0	3.1	23.6	7.8	3.0	32.1	9.7	3.3	37.4	12.6	3.0
		0	19.4	6.1	3.2	24.9	7.8	3.2	33.8	9.8	3.5	39.4	12.6	3.1
		2	20.4	6.1	3.4	26.1	7.7	3.4	35.2	9.8	3.6	41.6	12.6	3.3
		5	22.0	6.0	3.7	28.0	7.7	3.6	37.2	9.7	3.8	44.7	12.4	3.6
	Water	8	24.0	6.1	3.9	30.8	8.0	3.8	42.1	10.1	4.2	48.7	13.0	3.8
		10	25.4	6.1	4.2	32.6	8.0	4.1	44.2	10.1	4.4	51.3	12.9	4.0
		12	26.8	6.1	4.4	34.4	8.0	4.3	46.3	10.2	4.6	53.8	12.9	4.2
		15	28.9	6.1	4.7	37.1	8.0	4.6	49.5	10.3	4.8	57.6	12.9	4.5
55	Brine	-5	16.4	6.6	2.5	21.4	8.8	2.4	29.0	10.6	2.7	33.0	14.1	2.3
		-2	17.8	6.7	2.7	23.1	8.7	2.7	31.6	10.7	3.0	35.9	14.2	2.5
		0	18.8	6.7	2.8	24.2	8.6	2.8	33.3	10.8	3.1	37.9	14.2	2.7
		2	19.8	6.7	2.9	25.3	8.6	3.0	34.2	10.6	3.2	40.1	14.1	2.8
		5	21.3	6.7	3.2	26.9	8.5	3.2	35.6	10.4	3.4	43.3	13.9	3.1
	Water	8	23.1	6.9	3.4	29.7	9.0	3.3	41.5	11.2	3.7	47.5	14.5	3.3
		10	24.5	6.9	3.6	31.4	9.0	3.5	43.6	11.2	3.9	49.9	14.5	3.5
		12	25.8	6.9	3.8	33.2	9.0	3.7	45.6	11.3	4.0	52.2	14.4	3.6
		15	27.9	6.8	4.1	35.8	9.0	4.0	48.6	11.4	4.3	55.7	14.4	3.9
60	Brine	-5	16.0	7.8	2.1	20.3	10.4	2.0	27.7	13.1	2.1	32.5	16.9	1.9
		-2	17.4	7.8	2.2	22.1	10.3	2.1	30.0	13.2	2.3	35.2	16.8	2.1
		0	18.3	7.8	2.3	23.3	10.3	2.3	31.6	13.3	2.4	37.0	16.8	2.2
		2	19.3	7.8	2.5	24.6	10.3	2.4	33.1	13.4	2.5	39.0	16.6	2.4
		5	20.8	7.9	2.7	26.4	10.3	2.6	35.5	13.5	2.6	42.0	16.2	2.6
	Water	8	21.9	7.9	2.8	28.1	10.3	2.7	37.9	13.5	2.8	45.9	16.6	2.8
		10	23.2	7.9	2.9	29.7	10.3	2.9	40.6	13.5	3.0	47.9	16.6	2.9
		12	24.4	7.9	3.1	31.4	10.3	3.0	43.5	13.4	3.2	49.9	16.5	3.0
		15	26.3	7.9	3.3	33.8	10.3	3.3	46.5	13.4	3.5	52.9	16.5	3.2

t_{VL} = heating flow temperature (°C)
t_Q = source temperature (°C)
Q_h = heat output at full load (kW), measured in accordance with standard EN 14511
P = power consumption of the overall unit (kW)
COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

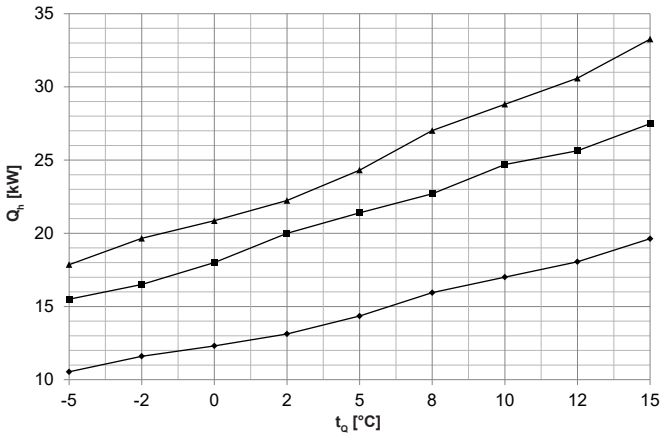
Observe daily power interruptions!
see “Engineering heat pumps general”

Performance data - heating

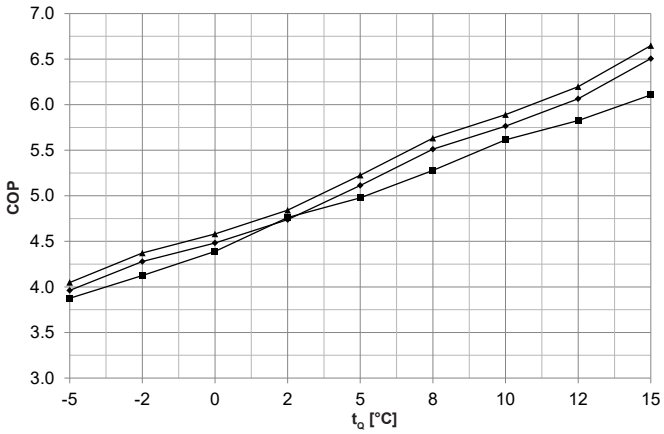
Maximum heat output

Thermalia® twin H (13-22)

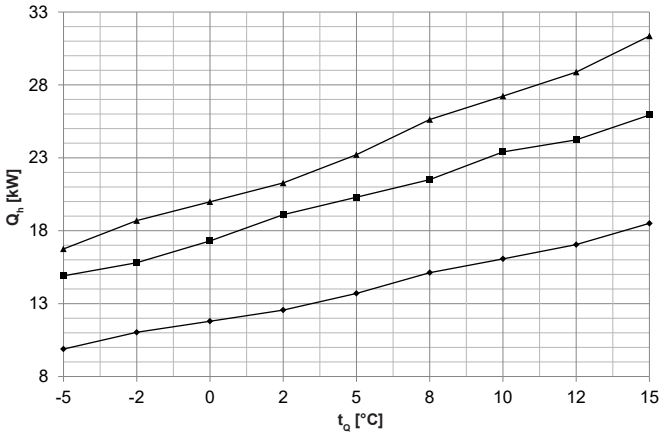
Heat output - t_{VL} 35 °C



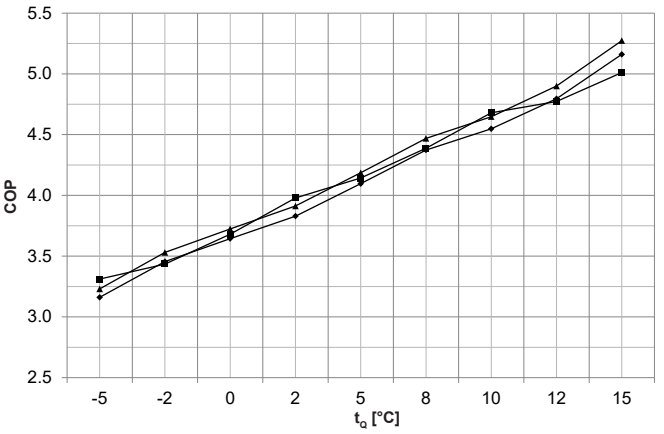
Coefficient of performance - t_{VL} 35 °C



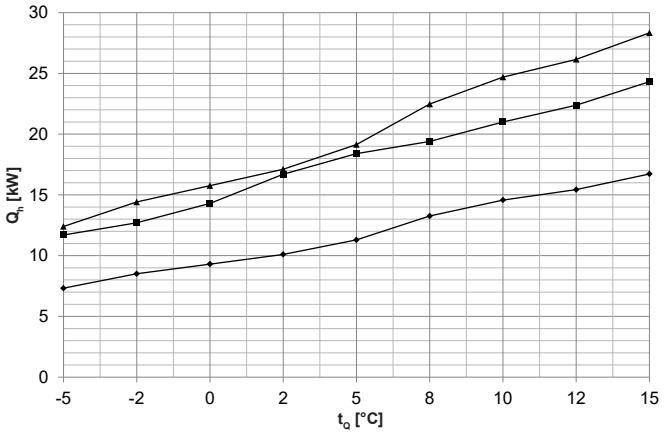
Heat output - t_{VL} 45 °C



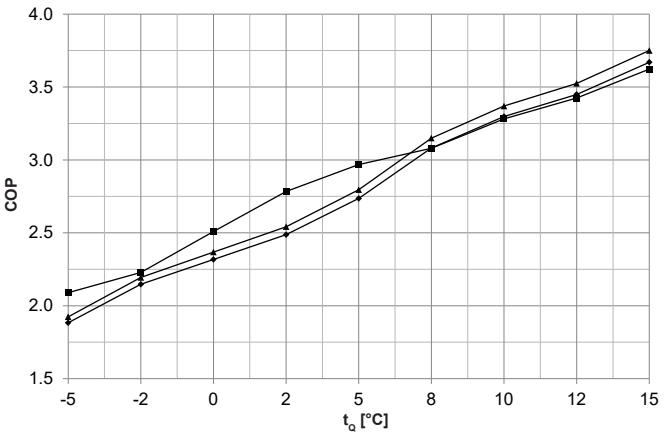
Coefficient of performance - t_{VL} 45 °C



Heat output - t_{VL} 60 °C



Coefficient of performance - t_{VL} 60 °C



t_{VL} = heating flow temperature (°C)
t_Q = source temperature (°C)
Q_h = heat output at full load (kW), measured in accordance with standard EN 14511
COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

Thermalia® twin H (13)
Thermalia® twin H (19)
Thermalia® twin H (22)

Performance data - heating
Thermalia® twin H (13-22)

Indications acc. to EN 14511

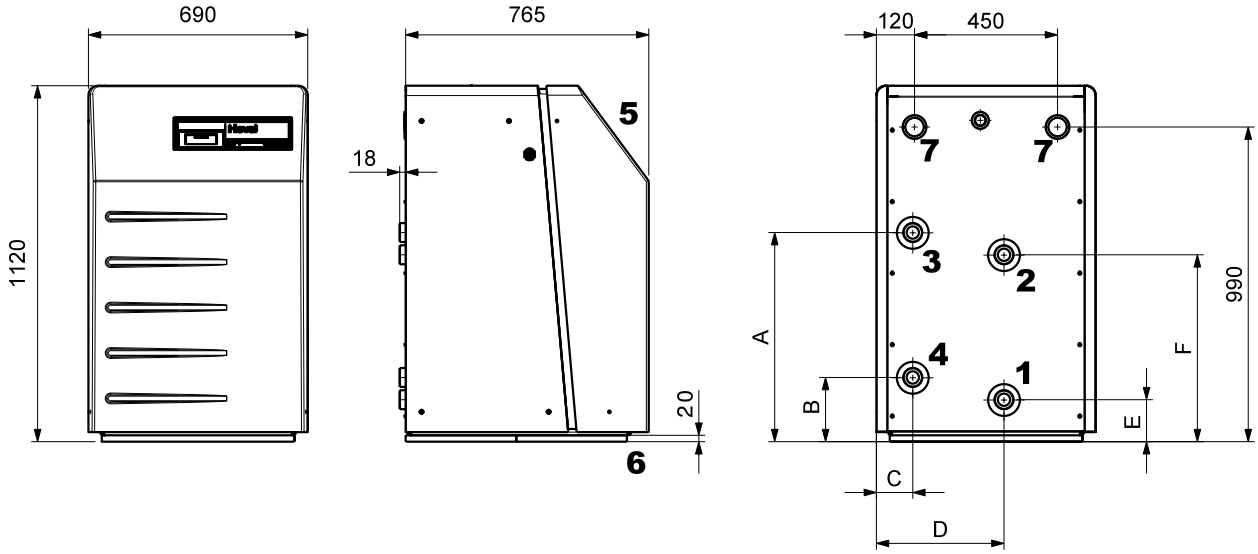
Type			H (13)			H (19)			H (22)		
t_{VL} °C		t_Q °C	Q_h kW	P kW	COP	Q_h kW	P kW	COP	Q_h kW	P kW	COP
30	Brine	-5	10.9	2.4	4.5	15.8	3.5	4.5	18.4	4.0	4.6
		-2	11.9	2.5	4.8	16.8	3.7	4.5	20.1	4.1	4.9
		0	12.6	2.5	5.0	18.4	3.7	5.0	21.3	4.1	5.1
		2	13.4	2.5	5.3	20.5	3.8	5.4	22.7	4.2	5.5
		5	14.7	2.5	5.8	22.0	3.9	5.6	24.9	4.2	5.9
	Water	8	16.4	2.6	6.3	24.0	4.0	6.0	27.7	4.3	6.4
		10	17.5	2.7	6.6	25.3	4.0	6.3	29.6	4.4	6.7
		12	-	-	-	-	-	-	-	-	-
		15	-	-	-	-	-	-	-	-	-
35	Brine	-5	10.5	2.7	4.0	15.5	4.0	3.9	17.9	4.4	4.1
		-2	11.6	2.7	4.3	16.5	4.0	4.1	19.7	4.5	4.4
		0	12.3	2.7	4.5	18.0	4.1	4.4	20.9	4.6	4.6
		2	13.1	2.8	4.7	20.0	4.2	4.8	22.2	4.6	4.8
		5	14.3	2.8	5.1	21.4	4.3	5.0	24.3	4.7	5.2
	Water	8	15.9	2.9	5.5	22.7	4.3	5.2	27.0	4.8	5.6
		10	17.0	3.0	5.8	24.7	4.4	5.6	28.8	4.9	5.9
		12	18.1	3.0	6.1	25.6	4.4	5.8	30.6	4.9	6.2
		15	19.6	3.0	6.5	27.5	4.5	6.1	33.3	5.0	6.7
40	Brine	-5	10.2	2.9	3.5	15.1	4.4	3.4	17.3	4.8	3.6
		-2	11.3	3.0	3.8	16.1	4.4	3.7	19.2	4.9	3.9
		0	12.1	3.0	4.0	17.6	4.5	3.9	20.4	5.0	4.1
		2	12.8	3.0	4.3	19.5	4.6	4.2	21.8	5.0	4.3
		5	14.0	3.1	4.6	20.8	4.7	4.4	23.8	5.1	4.7
	Water	8	15.5	3.2	4.9	22.0	4.8	4.6	26.3	5.3	5.0
		10	16.5	3.2	5.1	24.0	4.8	5.0	28.0	5.4	5.2
		12	17.5	3.3	5.4	25.1	4.9	5.1	29.7	5.4	5.5
		15	19.1	3.3	5.8	26.8	5.0	5.4	32.3	5.5	5.9
45	Brine	-5	9.9	3.1	3.2	14.9	4.5	3.3	16.8	5.2	3.2
		-2	11.0	3.2	3.5	15.8	4.6	3.4	18.7	5.3	3.5
		0	11.8	3.2	3.6	17.3	4.7	3.7	20.0	5.4	3.7
		2	12.6	3.3	3.8	19.1	4.8	4.0	21.3	5.4	3.9
		5	13.7	3.3	4.1	20.3	4.9	4.1	23.2	5.5	4.2
	Water	8	15.1	3.5	4.4	21.5	4.9	4.4	25.6	5.7	4.5
		10	16.1	3.5	4.6	23.4	5.0	4.7	27.2	5.9	4.7
		12	17.0	3.6	4.8	24.2	5.1	4.8	28.9	5.9	4.9
		15	18.5	3.6	5.2	25.9	5.2	5.0	31.4	5.9	5.3
50	Brine	-5	9.0	3.4	2.7	13.8	4.9	2.8	15.3	5.6	2.7
		-2	10.2	3.4	3.0	14.8	4.9	3.0	17.3	5.7	3.0
		0	11.0	3.5	3.1	16.3	5.0	3.3	18.6	5.8	3.2
		2	11.7	3.5	3.3	18.3	5.2	3.5	19.9	5.9	3.4
		5	12.9	3.6	3.6	19.7	5.3	3.7	21.9	6.0	3.7
	Water	8	14.5	3.7	3.9	20.8	5.4	3.9	24.6	6.2	4.0
		10	15.6	3.8	4.1	22.6	5.4	4.2	26.4	6.3	4.2
		12	16.5	3.9	4.3	23.6	5.5	4.3	28.0	6.4	4.4
		15	17.9	3.9	4.6	25.4	5.6	4.5	30.3	6.5	4.7
55	Brine	-5	8.2	3.6	2.3	12.8	5.2	2.5	13.9	6.0	2.3
		-2	9.3	3.7	2.5	13.8	5.3	2.6	15.8	6.1	2.6
		0	10.1	3.8	2.7	15.3	5.4	2.8	17.2	6.2	2.8
		2	10.9	3.8	2.9	17.5	5.6	3.1	18.5	6.3	2.9
		5	12.1	3.9	3.1	19.0	5.7	3.3	20.5	6.4	3.2
	Water	8	13.9	4.0	3.5	20.1	5.8	3.5	23.5	6.7	3.5
		10	15.1	4.1	3.7	21.8	5.9	3.7	25.5	6.8	3.7
		12	16.0	4.2	3.8	23.0	6.0	3.8	27.1	6.9	3.9
		15	17.3	4.2	4.1	24.8	6.2	4.0	29.3	7.0	4.2
60	Brine	-5	7.3	3.9	1.9	11.7	5.6	2.1	12.4	6.4	1.9
		-2	8.5	4.0	2.2	12.7	5.7	2.2	14.4	6.6	2.2
		0	9.3	4.0	2.3	14.3	5.7	2.5	15.8	6.7	2.4
		2	10.1	4.1	2.5	16.7	6.0	2.8	17.1	6.7	2.5
		5	11.3	4.1	2.7	18.4	6.2	3.0	19.1	6.8	2.8
	Water	8	13.3	4.3	3.1	19.4	6.3	3.1	22.5	7.1	3.2
		10	14.6	4.4	3.3	21.0	6.4	3.3	24.7	7.3	3.4
		12	15.4	4.5	3.5	22.4	6.5	3.4	26.2	7.4	3.5
		15	16.7	4.6	3.7	24.3	6.7	3.6	28.3	7.6	3.8

t_{VL} = heating flow temperature (°C)
t_Q = source temperature (°C)
Q_h = heat output at full load (kW), measured in accordance with standard EN 14511
P = power consumption of the overall unit (kW)
COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

Observe daily power interruptions!
see “Engineering heat pumps general”

Thermalia® twin (20-42) and twin H (13-22)

(Dimensions in mm)



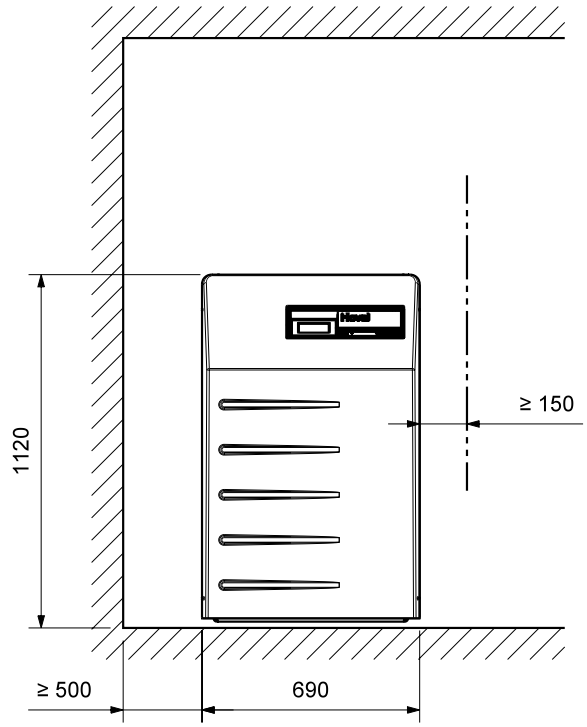
Type	A	B	C	D	E	F
Thermalia® twin (20-42)	741	222	274.5	481.5	170	689
Thermalia® twin H (13-22)	658	202	114	401	132	588

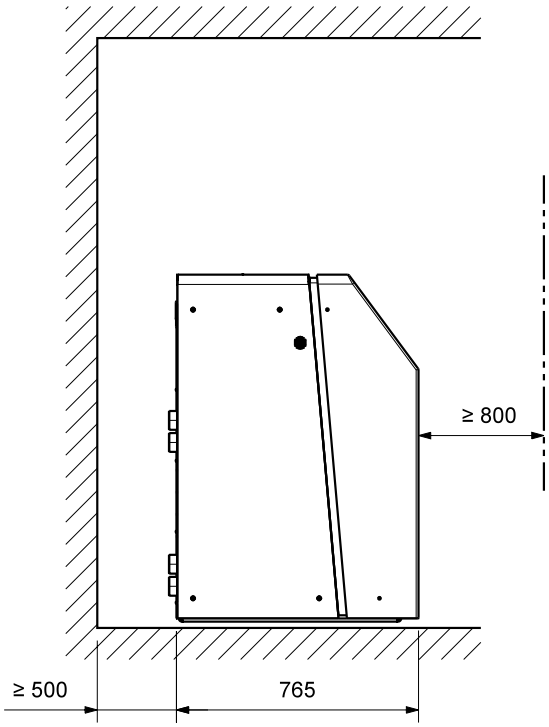
1 Heat source - discharge R 1½″
Thermalia® twin (20,26), twin H (13,19)
Heat source - discharge R 2″
Thermalia® twin (36,42), twin H (22)
2 Heat source - inlet R 1½″
Thermalia® twin (20,26), twin H (13,19)
Heat source - inlet R 2″
Thermalia® twin (36,42), twin H (22)
3 Heating flow R 1½″
Thermalia® twin (20,26), twin H (13,19)
Heating flow R 2″
Thermalia® twin (36,42), twin H (22)
4 Heating return R 1½″
Thermalia® twin (20,26), twin H (13,19)
Heating return R 2″
Thermalia® twin (36,42), twin H (22)
5 Operating panel
6 Vibration damping
7 Electrical connection

Required space

Required wall distance in mm for operation and maintenance
(Dimensions in mm)

Front	Rear	Right or left side
min. 800	min. 500	min. 500





Looking for the appropriate hydraulic schematic?
Please contact your local Hoval partner.