TERO
Made in Germany.

RANSTA *heat*

Propane heat pump for outdoor installation

RANSTA heat


R290
Propane
Natural refrigerant
Heat Pump
SCOP
variable speed
compressor
down to -20°C
ambient
First R290 heat pump
with full variable regulation

Made in Germany.

RANSTA*heat* - B / LN / DS 65-1

RANSTA*heat*-Series

Solution

B = Basic

I = Integrated hydronic

Version

ST = Standard

LN = Low noise

SL = Super low noise

Equipment

AS = Standard equipment

DS = Desuperheater

Model

RANSTA

Propane heat pump for outdoor installation

RANSTA*heat* 35-1-1...95-1-1
Heating capacity 35.7 ... 94.5 kW
Cooling capacity 29.9 ... 82.0 kW

- Solution
  B - Basic
  I - Integrated hydraulic
- Equipment
  AS - Standard equipment
  DS - Desuperheater
- Version
  ST - Standard
  LN - Low noise
  SL - Super low noise

Main features.

System safety. There is a gas sensor installed inside the housing for the safety of the device. The sensor is ATEX certified and contains a Modbus output signal (external power supply). The alarm level is set to 10 % lower explosion limit (LEL). In case of a leakage of R 290, an ATEX radial fan is switched on to ventilate the compressor housing. Simultaneously all other components in the compressor housing are automatically switched off.

Structure Base and frame made from galvanized steel sheets. All parts are powder-coated to assure complete weather resistance. Sandwich insulation of the panels with rock wool (SL version).

Frequency controlled compressors. Semi-hermetic compressors mounted on anti-vibration devices. With pressure lubrication system, oil crankcase heater and integrated electronics. Rotalock valves mounted on suction and discharge side. A frequency converter adjusts the compressor power to the required heating or cooling needs.

Condenser fans. Axial fans with highly efficient external EC motors, protection class IP54, thermal class THCL155, motor efficiency class IE4.

Air heat exchanger. Copper coil air heat exchanger with hydrophil coated aluminium fins.

Control panel. Manufactured and wired according to directive IEC 2014-1/EN60204-1. The conrol panel consists of the following main components: Main switch, safety device for door lock, contactors and fuses, protection class IP54. All cables and components labelled for easy maintenance. For increased safety, the panel is located outside the machine. To monitor leakages the propane sensor is equipped with a separate power supply.

Control. Microprocessor to control the system and to check the operating alarms. Connection to building control system via various options possible.

Refrigerant circuit. Filter drier, gauge-glass with humidity indicator, 4-way reversing valve, liquid receiver, liquid separator, shut-off valve on the liquid line, electronic expansion valve, safety valve, high and low pressure gauges. Multiple components are ATEX certified.

OPTIONAL

DS equipment. Brazed plate heat exchanger (stainless steel AISI 316) offers high heat exchange capacities and high performance results. The heat exchanger is thermally insulated and equipped with a vent valve.

Integrated hydraulics. Insulated water reservoir from hot-dip galvanized steel, water pressure gauge, glycol pump, safety valve 6 bar, manual vent valve. Optional: speed controlled and twin pumps.

Main accessories.

- Anti-vibration rubber or spring mounts
- Air heat exchanger protection panel or filter (aluminium mesh)
- Air heat exchanger with various coatings
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard pressure
- Open expansion tank
- Closed expansion vessel with automatic filling unit
- Master / Slave controller for multi-installation
- Additional accessories on request

Refrigerant R 290 | Axial fans | Piston compressors | Plate heat exchangers | Inverter

TERO Made in Germany.

RANSTA*heat*		35-1	55-1	65-1	80-1	95-1
HEATING CAPACITY (1)	kW	35.7	53.8	67.4	83.2	94.5
Total power input (1)	kW	10.9	16.4	21.1	25.1	29.2
COP		3.28	3.28	3.19	3.32	3.23
Water flow (1)	m3/h	6.1	9.3	11.6	14.3	16.3
Water pressure drop (1) - Basic version	kPa	29	34	51	32	34
SCOP *	W/W	3.59	3.40	3.50	3.51	3.41
Energy efficiency class of the seasonal space heating **		A++	A++	A++	-	-
COOLING CAPACITY (2)	kW	29.9	46.3	57.8	71.8	82.0
Total power input (2)	kW	11.9	16.9	22.9	26.3	31.8
EER		2.52	2.74	2.53	2.73	2.58
Water flow (2)	m3/h	5.1	8.0	9.9	12.3	14.1
Water pressure drop (2) - Basic version	kPa	26	33	40	26	28
REFRIGERANT		R 290				
Charge of refrigerant	kg	4.0	5.6	5.8	8.5	8.7
Number of refrigerant circuits	n°	1	1	1	1	1
Compressor type		Semihermetic piston with INVERTER				
Compressor quantity	n°	1	1	1	1	1
Expansion valve		Elektronic				
Fans		Axial EC				
Fans quantity		1	2	2	3	3
Fans power input (total) (1)	kW	0.74	1.55	1.55	2.35	2.35
Total air flow	m3/h	13,900	26,500	26,500	39,500	39,500
ELECTRICAL DATA						
Power supply (main)		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Power supply (gas detector)		230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Maximum absorbed power	kW	12.9	20.2	22.5	28.7	31.1
Maximum absorbed current	A	< 10	< 10	< 10	< 10	< 10
Starting current	A	22.3	39.7	40.7	49.7	52.7
INTEGRATED SOLUTION - WITH HYDRONIC KIT						
Buffer tank capacity	L	300	300	300	300	300
Block pump		Centrifugal				
STANDARD PUMP (1.5 bar)						
Pump motor nominal power input	kW	0.55	1.1	1.1	1.5	1.5
Pump motor nominal absorbed current	A	1.85	3.3	3.3	3.8	3.8
WATER CONNECTIONS						
Size (nominal external diameter)	inch	1"	1" ¼	1" ¼	1" ½	1" ½
NOISE LEVELS (3)						
Total sound level (ST version) in 10 m distance	db(A)	43	47	47	49	52
Total sound level (LN version) in 10 m distance	db(A)	42	46	46	48	50
Total sound level (SL version) in 10 m distance	db(A)	40	43	43	45	47
DIMENSIONS AND WEIGHTS - UNIT - BASIC VERSION						
Lenght	mm	1,775	2,365	2,365	3,325	3,325
Depth	mm	1,050	1,050	1,050	1,050	1,050
Height	mm	1,900	1,900	1,900	1,900	1,900
Shipment weight - ST version	kg	350	480	540	710	720
Shipment weight - LN version	kg	360	495	560	730	740
Shipment weight - SL version	kg	440	600	680	890	900

(1) Outdoor ambient air = +7°C / 87% r.h. - Condenser water temperature IN/OUT = 40/45°C - Liquid: water

(2) Condenser air intake temperature = 35°C - Evaporator water temperature IN/OUT = 12/7°C - Liquid: water
The described cooling capacity does not take into account any power consumption of the pump motor, if any.

(3) Sound level in compliance with ISO 3744 - Sound pressure level (average value), unit in open space on a reflective surface; non-binding value obtained from the sound level.

* Performance in average climatic conditions according to regulation EU no. 813/2013 - Pdesignh ≤ 400kW

** Energy efficiency class according to regulation EU no. 811/2013 - heat pump space heaters ≤ 70kW

RANSTA

Propane heat pump for outdoor installation

RANSTA*heat* 110-2-2...190-2-2S
Heating capacity 113.6 ... 188.9 kW
Cooling capacity 96.4 ... 164.4 kW

- Solution
  B - Basic
  I - Integrated hydraulic
- Equipment
  AS - Standard equipment
  DS - Desuperheater
- Version
  ST - Standard
  LN - Low noise
  SL - Super low noise

Main features.

System safety. There is a gas sensor installed inside the housing for the safety of the device. The sensor is ATEX certified and contains a Modbus output signal (external power supply). The alarm level is set to 10 % lower explosion limit (LEL). In case of a leakage of R 290, an ATEX radial fan is switched on to ventilate the compressor housing. Simultaneously all other components in the compressor housing are automatically switched off.

Structure Base and frame made from galvanized steel sheets. All parts are powder-coated to assure complete weather resistance. Sandwich insulation of the panels with rock wool (SL version).

Frequency controlled compressors. Semi-hermetic compressors mounted on anti-vibration devices. With pressure lubrication system, oil crankcase heater and integrated electronics. Rotalock valves mounted on suction and discharge side. A frequency converter adjusts the compressor power to the required heating or cooling needs.

Condenser fans. Axial fans with highly efficient external EC motors, protection class IP54, thermal class THCL155, motor efficiency class IE4.

Air heat exchanger. Copper coil air heat exchanger with hydrophil coated aluminium fins.

Control panel. Manufactured and wired according to directive IEC 2014-1/EN60204-1. The conrol panel consists of the following main components: Main switch, safety device for door lock, contactors and fuses, protection class IP54. All cables and components labelled for easy maintenance. For increased safety, the panel is located outside the machine. To monitor leakages the propane sensor is equipped with a separate power supply.

Control. Microprocessor to control the system and to check the operating alarms. Connection to building control system via various options possible.

Refrigerant circuit. Filter drier, gauge-glass with humidity indicator, 4-way reversing valve, liquid receiver, liquid separator, shut-off valve on the liquid line, electronic expansion valve, safety valve, high and low pressure gauges. Multiple components are ATEX certified.

OPTIONAL

DS equipment. Brazed plate heat exchanger (stainless steel AISI 316) offers high heat exchange capacities and high performance results. The heat exchanger is thermally insulated and equipped with a vent valve.

Integrated hydraulics. Insulated water reservoir from hot-dip galvanized steel, water pressure gauge, glycol pump, safety valve 6 bar, manual vent valve. Optional: speed controlled and twin pumps.

Main accessories.

- Anti-vibration rubber or spring mounts
- Air heat exchanger protection panel or filter (aluminium mesh)
- Air heat exchanger with various coatings
- Overpressure valve / automatic by-pass
- Double water pump (stand-by) - Standard pressure
- Open expansion tank
- Closed expansion vessel with automatic filling unit
- Master / Slave controller for multi-installation
- Additional accessories on request

Refrigerant R 290 | Axial fans | piston compressors | Plate heat exchangers | Inverter

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RANSTA*heat*		110-2	130-2	160-2	190-2
HEATING CAPACITY (1)	kW	113.6	135.9	166.8	188.9
Total power input (1)	kW	35.5	41.3	49.8	58.7
COP		3.20	3.29	3.35	3.22
Water flow (1)	m3/h	19.5	23.4	28.7	32.5
Water pressure drop (1) - Basic version	kPa	40	34	37	43
SCOP *	W/W	3.22	3.41	3.25	3.20
COOLING CAPACITY (2)	kW	96.4	117.5	143.9	164.4
Total power input (2)	kW	37.2	45.9	52.8	63.7
EER		2.59	2.56	2.73	2.58
Water flow (2)	m3/h	16.6	20.2	24.8	28.3
Water pressure drop (2) - Basic version	kPa	32	33	36	36
REFRIGERANT		R 290			
Charge of refrigerant	kg	5.5 x 2	5.8 x 2	8.5 x 2	8.7 x 2
Number of refrigerant circuits	n°	2	2	2	2
Compressor type		Semihermetic piston with INVERTER / 2			
Compressor quantity	n°	2	2	2	2
Expansion valve		Elektronic			
Fans		Axial EC			
Fans quantity		4	4	6	6
Fans power input (total) (1)	kW	3.10	3.10	4.70	4.70
Total air flow	m3/h	53,000	53,000	79,000	79,000
ELECTRICAL DATA					
Power supply (main)		400/3/50	400/3/50	400/3/50	400/3/50
Power supply (gas detector)		230/1/50	230/1/50	230/1/50	230/1/50
Maximum absorbed power	kW	40.4	45.0	57.3	62.1
Maximum absorbed current	A	< 50	< 50	< 60	< 60
Starting current	A	79.4	81.4	99.4	105.4
INTEGRATED SOLUTION - WITH HYDRONIC KIT					
Buffer tank capacity	L	470	470	470	470
Block pump		Centrifugal			
STANDARD PUMP (1.5 bar)					
Pump motor nominal power input	kW	1.5	1.5	2.2	2.2
Pump motor nominal absorbed current	A	3.8	3.8	4.7	4.7
WATER CONNECTIONS					
Size (nominal external diameter)	inch	2"	2"	2" ½	2" ½
NOISE LEVELS (3)					
Total sound level (ST version) in 10 m distance	db(A)	50	50	52	53
Total sound level (LN version) in 10 m distance	db(A)	49	49	51	51
Total sound level (SL version) in 10 m distance	db(A)	46	46	48	48
DIMENSIONS AND WEIGHTS - UNIT - BASIC VERSION					
Lenght	mm	3,290	3,290	4,090	4,090
Depth	mm	2,100	2,100	2,100	2,100
Height	mm	1,900	1,900	1,900	1,900
Shipment weight - ST version	kg	1,030	1,150	1,510	1,530
Shipment weight - LN version	kg	1,060	1,190	1,560	1,580
Shipment weight - SL version	kg	1,290	1,440	1,890	1,920

(1) Outdoor ambient air = +7°C / 87% r.h. - Condenser water temperature IN/OUT = 40/45°C - Liquid: water
(2) Condenser air intake temperature = 35°C - Evaporator water temperature IN/OUT = 12/7°C - Liquid: water
The described cooling capacity does not take into account any power consumption of the pump motor, if any.
(3) Sound level in compliance with ISO 3744 - Sound pressure level (average value), unit in open space on a reflective surface; non-binding value obtained from the sound level.

* Performance in average climatic conditions according to regulation EU no. 813/2013 - Pdesignh ≤ 400kW

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