

Compressor Special Calculation

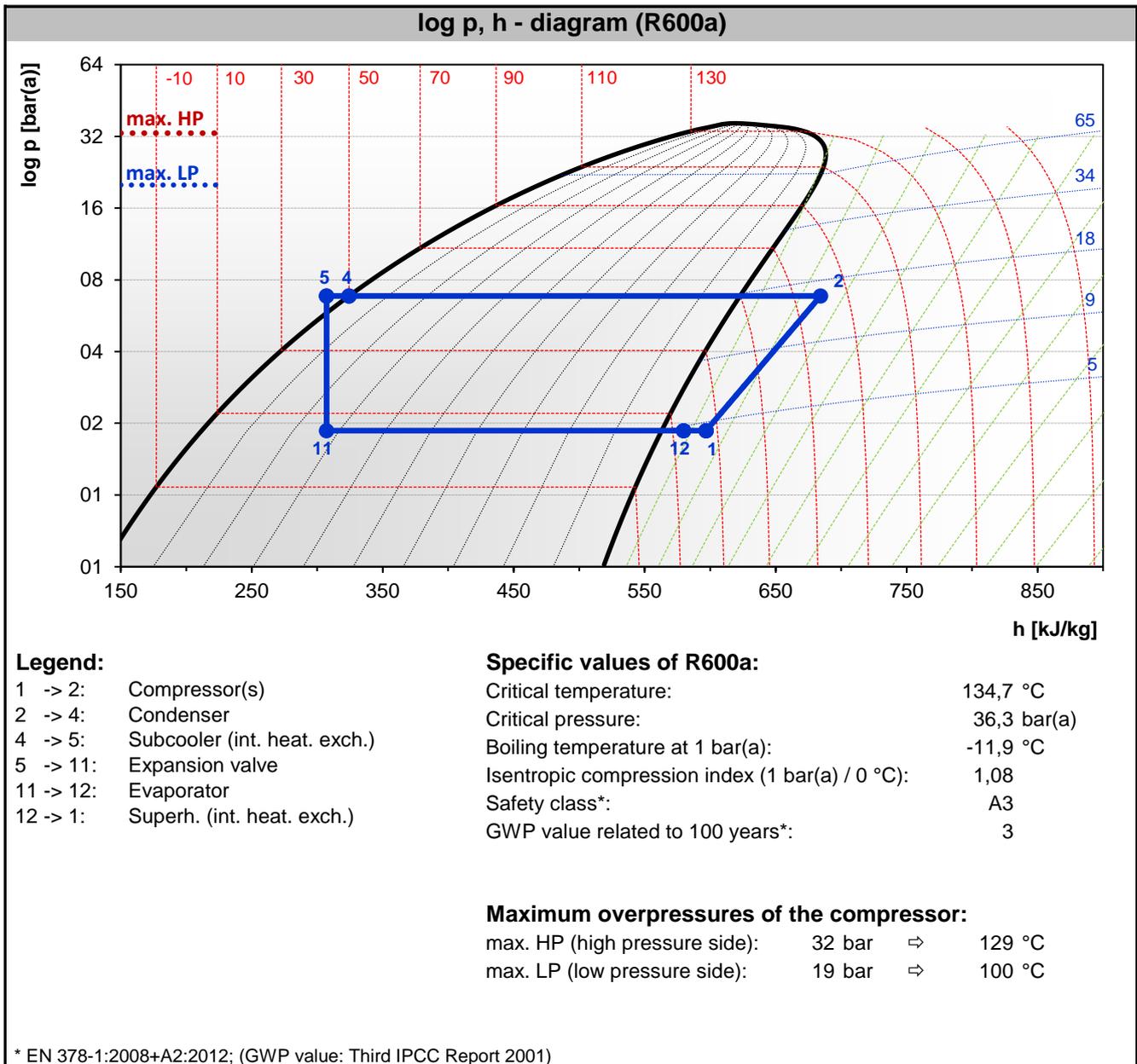


Operating conditions / given values			
Type of system	Single stage		
Refrigerant	R600a*		
Evaporating temperature	5,0 °C	(1,9 bar(a))	
Superheat evaporator	10,0 K		
Superheat suction line	0,0 K		
Superheat int. heat. exch.	10,0 K		
Superheat total	20,0 K	(25 °C)	
Condensing temperature	50,0 °C	(6,8 bar(a))	
Subcooling condenser	0,0 K		
Subcooling int. heat. exch.	6,5 K		
Subcooling external	0,0 K		
Subcooling total	6,5 K	(43,5 °C)	
Power supply frequency	50 Hz		
Performance data**			
Compressor model	4DESP-7P		
Cooling capacity, compressor	7,9 kW		
Cooling capacity, evaporator	7,9 kW		
Power input	2,5 kW		
Current (400 V)	7,0 A		
COP / EER	4,12		
Condenser capacity (2 -> 4)	10,4 kW		
Refrigerant mass flow (HP)	104 kg/h		
Discharge gas temp. without cooling	80 °C		
Int. heat exch. - Capacity / ΔT_{log}	0,5 kW	/	26,7 K
* Refrigerant data calculated by Aserep library			
** Listed performance data are based on calculations and measured data. Under worst conditions given values might differ from common tolerances			

BITZER supplies compressors for applications with the refrigerant R600a exclusively to customers with the necessary experience in this field. Moreover, BITZER supports the development and optimisation of such systems by own investigations.

In case of a compressor failure, the decision on a potential warranty claim remains reserved to a diagnosis and examination of the compressor at the BITZER factory. Design, operation, and monitoring of the system is in the responsibility of the designer or executing company.

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Application range (Preliminary)



Application related remarks:

The refrigerant R600a is a flammable refrigerant. The safety precautions and maximum refrigerant charges in accordance with EN-378 and resulting other standards or regulations regarding the classification in the safety group "A3" must be abided. The compressor must have a clearly visible logo showing "Attention Fire Hazard". Also, this logo has to remain on the compressor in case of a possible return delivery of the compressor to the manufacturer. Please mind our technical documentation KT-660 with general information on flammable refrigerants: "Application of Propane (R290) and Propene (R1270) with Semi-hermetic Compressors". Additionally, the ATEX directive must be applied to every refrigeration system on flammable refrigerants in Europe. In other regions of the world the local explosion-proof directives must be considered. Refrigerant concentration in the air in case of leak must be kept under the explosion limit of the mixture. At a dangerous concentration of refrigerant in the air, all electrical devices must be cut out. There cannot be any source of ignition like e.g. electric sparks in the area around the system, where refrigerant can leak.