F25B  REFRIGERATION MACHINES, PLANTS OR SYSTEMS; COMBINED HEATING AND REFRIGERATION SYSTEMS; HEAT-PUMP SYSTEMS

NOTES
1. Attention is drawn to Note (2) following the title of subclass F24F.
2. When classifying heat pump circuits or systems, groups F25B 1/00 - F25B 25/00 and F25B 29/00 take precedence over group F25B 30/00.

WARNING
In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Compression machines, plant, or systems

1/00 Compression machines, plant, or systems with non-reversible cycle (F25B 3/00, F25B 5/00, F25B 6/00, F25B 7/00, F25B 9/00 take precedence)

1/005 . of the single unit type (F25B 1/10 take precedence)

1/02 . with compressor of reciprocating-piston type (F25B 1/005, F25B 1/10 take precedence)

1/04 . with compressor of rotary type (F25B 1/005, F25B 1/10 take precedence)

1/047 . of screw type

1/053 . of turbine type

1/06 . with compressor of jet type, e.g. using liquid under pressure (F25B 1/005, F25B 1/10 take precedence)

1/08 . using vapour under pressure

1/10 . with multi-stage compression (with cascade operation F25B 7/00)

3/00 Self-contained rotary compression machines, i.e. with compressor, condenser, and evaporator rotating as a single unit

5/00 Compression machines, plant, or systems, with several evaporator circuits, e.g. for varying refrigerating capacity (with cascade operation F25B 7/00)

5/02 . arranged in parallel

5/04 . arranged in series

6/00 Compression machines, plant, or systems, with several condenser circuits

6/02 . arranged in parallel

6/04 . arranged in series

7/00 Compression machines, plant, or systems, with cascade operation, i.e. with two or more circuits, the heat from the condenser of one circuit being absorbed by the evaporator of the next circuit (F25B 9/00 takes precedence)

9/00 Compression machines, plant, or systems, in which the refrigerant is air or other gas of low boiling point

9/002 . [characterised by the refrigerant]

9/004 . [the refrigerant being air (air conditioning F24F)]

9/006 . [the refrigerant containing more than one component (F25B 9/004 takes precedence; refrigerant materials per se C09K 5/00)]

9/008 . [the refrigerant being carbon dioxide]

9/02 . using Joule-Thompson effect; using vortex effect

9/04 . using vortex effect

9/06 . using expanders (F25B 9/10 takes precedence)

9/065 . [using pressurised gas jets]

9/08 . using ejectors (F25B 9/10 takes precedence)

9/10 . with several cooling stages

9/12 . using ³He-⁴He dilution
Compression machines, plant, or systems (F25B)

Sorption machines, plant, or systems

15/00 Sorption machines, plant, or systems, operating continuously, e.g. absorption type
15/002 . [using the endothermic solution of salt]
15/004 . [of rotary type]
15/006 . [with cascade operation]
15/008 . [with multi-stage operation (F25B 15/006 takes precedence)]
15/02 . without inert gas ((F25B 15/004, F25B 15/006, F25B 15/008), F25B 15/12, F25B 15/14, F25B 15/16 take precedence)
15/025 . [Liquid transfer means]
15/04 . the refrigerant being ammonia evaporated from aqueous solution ((F25B 15/025 takes precedence)]
15/06 . the refrigerant being water vapour evaporated from a salt solution, e.g. lithium bromide ((F25B 15/025 takes precedence)
15/08 . the refrigerant being sulfuric acid ((F25B 15/025 takes precedence)
15/09 . the refrigerant being hydrogen desorbed from a hydride ((F25B 15/025 takes precedence)
15/12 . with resorber ((F25B 15/004, F25B 15/006, F25B 15/008), F25B 15/14 take precedence)
15/14 . using osmosis ((F25B 15/004, F25B 15/006, F25B 15/008 take precedence)
15/16 . using desorption cycle ((F25B 15/004, F25B 15/006, F25B 15/008 take precedence)

17/00 Sorption machines, plant, or systems, operating intermittently, e.g. absorption or adsorption type
17/02 . the absorbent or adsorbent being a liquid, e.g. brine (F25B 17/10 takes precedence)
17/04 . with two or more boilers operating alternately
17/06 . with the boiler and evaporator built-up as a unit in a tiltable or revolving arrangement
17/08 . the absorbent or adsorbent being a solid, e.g. salt (F25B 17/12 takes precedence)
17/083 . [with two or more boiler-sorbers operating alternately]
17/086 . [with two or more boiler-sorber/evaporator units]
17/10 . using the endothermic solution of salt
17/12 . using desorption of hydrogen from a hydride

Component parts or details

31/00 Compressor arrangements (compressors per se F04)
31/002 . [lubrication of compressors per se F04B, of machines or engines in general F01M]
31/004 . [oil recirculating arrangements]
31/006 . [cooling of compressor or motor (of compressors per se F04B 39/06)]
31/008 . [by injecting a liquid (for compressors in general F04B 39/06G)]
31/02 . [of motor-compressor units]
31/023 . [with compressor of reciprocating-piston type]
31/026 . [with compressor of rotary type]

33/00 Boilers; Analysers; Rectifiers (boiler-absorbers F25B 35/00)
35/00 Boiler-absorbers, i.e. boilers usable for absorption or adsorption
35/02 . using a liquid as sorbent, e.g. brine
35/04 . using a solid as sorbent

Machines, plant, or systems, with a single mode of operation, not covered by groups F25B 1/00 - F25B 17/00

19/00 Machines, plant, or systems, using evaporation of a refrigerant but without recovery of the vapour
19/005 . [the refrigerant being a liquefied gas]
19/02 . using fluid jet, e.g. of steam ((F25B 19/005 takes precedence)
19/04 . using liquid jet, e.g. of water

21/00 Machines, plant, or systems, using electric or magnetic effects (magnetic refrigerating material H01F 1/012 and H01F 1/017)
21/02 . using Peltier effect; using Nernst-Ettinghausen effect (thermoelectric elements H01L 35/00, H01L 37/00)
21/04 . reversible

23/00 Machines, plant, or systems, with a single mode of operation not covered by groups F25B 1/00 - F25B 21/00, e.g. using selective radiation effect
23/003 . [using selective radiation effect]
23/006 . [boiling cooling systems]

25/00 Machines, plant, or systems, using a combination of modes of operation covered by two or more of the groups F25B 1/00 - F25B 23/00 (combinations of two or more modes of operation covered by a single main group, see the relevant group)
25/005 . [using primary and secondary systems]
25/02 . Compression-sorption machines, plants, or systems
27/00 Machines, plant, or systems, using particular sources of energy (F25B 30/06 takes precedence)
27/002 . [using solar energy (solar heat collectors F24S)]
27/005 . [in compression type systems]
27/007 . [in sorption type systems]
27/02 . using waste heat, e.g. from internal-combustion engines
Component parts or details

37/00 Absorbers; Adsorbers (boiler-absorbers F25B 35/00; separating processes involving the treatment of liquids with adsorbents B01D 15/00; separation of gases or vapours by adsorption B01D 53/02; separation of gases or vapours by absorption B01D 53/14; investigating using adsorption or absorption G01N 30/00; \{absorption or adsorption in general B01J 20/00\})

39/00 Evaporators; Condensers
39/02 . . . Evaporators
39/022 . . . \{with plate-like or laminated elements\}
39/024 . . . \{with elements constructed in the shape of a hollow panel\} (for heat exchange in general F28F 3/12)
39/026 . . . \{specially adapted for sorption type systems\}
39/028 . . . \{having distributing means\}
39/04 . Condensers

40/00 Subcoolers, desuperheaters or superheaters
40/02 . Subcoolers
40/04 . Desuperheaters
40/06 . Superheaters

41/00 Fluid-circulation arrangements, e.g. for transferring liquid from evaporator to boiler (pumps per se, sealings therefor F04)
41/003 . . . \{fluid line arrangements\}
41/006 . . . \{optical fluid control arrangements\}
41/02 . using electro-osmosis
41/04 . Disposition of valves \{valves per se F16K\}
41/043 . . . \{in the circuit between evaporator and compressor\}
41/046 . . . \{of fluid flow reversing valves\}
41/06 . Flow restrictors, e.g. capillary tubes; Disposition thereof
41/062 . . . \{Expansion valves \{regulating valves per se G05D\}\}
41/065 . . . \{Float control valves\}
41/067 . . . \{capillary tubes\}

43/00 Arrangements for separating or purifying gases or liquids \{in analysers or rectifiers F25B 33/00; Arrangements for vapourising the residuum of liquid refrigerant, e.g. by heat \{F25B 40/00 takes precedence\}\}
43/003 . . . \{filters \{in general B01D\}\}
43/006 . . . \{accumulators\}
43/02 . for separating lubricants from the refrigerant
43/04 . for withdrawing non-condensible gases
43/043 . . . \{for compression type systems\}
43/046 . . . \{for sorption type systems\}

45/00 Arrangements for charging or discharging refrigerant

47/00 Arrangements for preventing or removing deposits or corrosion, not provided for in another subclass
47/003 . . . \{for preventing corrosion\}
47/006 . . . \{for preventing frost\}
47/02 . Defrosting cycles
47/022 . . . \{hot gas defrosting\}
47/025 . . . \{by reversing the cycle\}
47/027 . . . \{for defrosting sorption type systems\}

49/00 Arrangement or mounting of control or safety devices \{testing refrigerators G01M; control in general G05\}
49/005 . . . \{of safety devices \{F25B 49/02 and F25B 49/04 take precedence\}\}
49/02 . for compression type machines, plant or systems
49/022 . . . \{Compressor control arrangements \{in general F04B\}\}
49/025 . . . \{Motor control arrangements \{motors per se H02K\}\}
49/027 . . . \{Condenser control arrangements\}
49/04 . for sorption type machines, plant or systems
49/043 . . . \{Operating continuously\}
49/046 . . . \{Operating intermittently\}

2300/00 Special arrangements or features for refrigeration machines, plants or systems, combined heating and refrigeration systems or heat-pump systems

2309/00 Gas cycle refrigeration machines
2309/001 . with a linear configuration or a linear motor
2309/002 . with parallel working cold producing expansion devices in one circuit
2309/003 . \{characterised by construction or composition of the regenerator\}
2309/004 . \{using a compressor of the rotary type\}
2309/005 . \{using an expander of the rotary type\}
2309/006 . \{using a distributing valve of the rotary type\}
2309/002 . \{using the Joule-Thompson effect\}
2309/021 . \{with a cryosurgical probe tip having a specific construction\}
2309/022 . \{characterised by the expansion element\}
2309/023 . \{with two stage expansion\}
2309/006 . \{Compression machines, plant or systems characterised by the refrigerant being carbon dioxide\}
2309/061 . \{with cycle highest pressure above the supercritical pressure\}
2309/14 . \{Compression machines, plant or systems characterised by the cycle used\}
2309/1401 . . . \{Ericsson or Ericsson cycles\}
2309/1402 . . . \{Pulse-tube cycles with acoustic driver\}
2309/1403 . . . \{Pulse-tube cycles with heat input into acoustic driver\}
2309/1404 . . . \{Pulse-tube cycles with loudspeaker driven acoustic driver\}
2309/1405 . . . \{Pulse-tube cycles with travelling waves\}
2309/1406 . . . \{Pulse-tube cycles with pulse tube in co-axial or concentric geometrical arrangements\}
2309/1407 . . . \{Pulse-tube cycles with pulse tube having in-line geometrical arrangements\}
2309/1408 . . . \{Pulse-tube cycles with pulse tube having U-turn or L-turn type geometrical arrangements\}
2309/1409 . . . \{Pulse-tube cycles with pulse tube having special type of geometrical arrangements not being a coaxial, in-line or U-turn type\}
2309/1411 . . . \{Pulse-tube cycles characterised by control details, e.g. tuning, phase shifting or general control\}
2309/1412 . . . \{Pulse-tube cycles characterised by heat exchanger details\}
2309/1413 . . . \{Pulse-tube cycles characterised by performance, geometry or theory\}
Pulse-tube cycles characterised by pulse tube details

Pulse-tube cycles characterised by regenerator details

Pulse-tube cycles characterised by regenerator stack details

Pulse-tube cycles without any valves in gas supply and return lines

Pulse-tube cycles with valves in gas supply and return lines

the valves being of the rotary type

Pulse-tube cycles with pulse tube having a basic pulse tube refrigerator [PTR], i.e. comprising a tube with basic schematic

Pulse-tube cycles characterised by details not otherwise provided for

Pulse tubes with basic schematic including a counter flow heat exchanger instead of a regenerative heat exchanger

Pulse tubes with basic schematic including an inertance tube

Pulse tubes with basic schematic including an orifice and a reservoir

Pulse tubes with basic schematic including an orifice reservoir multiple inlet pulse tube

Pulse tubes with basic schematic including several pulse tubes

Pulse tubes with basic schematic including at the pulse tube warm end a so called warm end expander

Control of a pulse tube

Control of a Stirling refrigeration machine

Compressors, machines, plant, or systems with reversible cycle not otherwise provided for

with two or more accumulators

Indoor unit with water as a heat sink or heat source

Outdoor unit with water as a heat sink or heat source

Outdoor unit expansion valves

two pipes connecting the outdoor side to the indoor side with multiple indoor units

three pipes connecting the outdoor side to the indoor side with multiple indoor units

Refrigerant heaters

indoor unit in circulation with outdoor unit in first operation mode, indoor unit in circulation with an other heat exchanger in second operation mode or outdoor unit in circulation with an other heat exchanger in third operation mode

Indoor unit or outdoor unit with auxiliary heat exchanger not forming part of the indoor or outdoor unit

the auxiliary heat exchanger being only used during defrosting

the auxiliary heat exchanger being only used during dehumidifying

the auxiliary heat exchanger being only used during heating

the auxiliary heat exchanger being used parallel to the indoor unit during heating operation

the auxiliary heat exchanger being used parallel to the outdoor heat exchanger during heating operation

using multiple indoor units

with simultaneous cooling and heating

with bypasses

during cooling

during defrosting

during heating

in parallel arrangements

during cooling

during defrosting

during dehumidification

during heating

in series arrangements

during cooling

during defrosting

during dehumidification

during heating

being defrosted alternately

with bypasses

during cooling

during defrosting

during heating

in parallel arrangements

during cooling

during defrosting

during heating

in series arrangements

during cooling

during defrosting

during heating

characterised by the reversing means

the compressor allows rotation in reverse direction

using bridge circuits of one-way valves

using one three-way valve

using two three-way valves

using one four-way valve

using two four-way valves

using three four-way valves

using six-way valves

using nine-way valves

using shut-off valves

using reversing valve changing the refrigerant flow direction due to pressure differences of the refrigerant and not by external actuation

Control issues

related to the pressure of the indoor unit

related to reversing valves

related to the indoor fan, e.g. controlling speed

related to the outdoor fan, e.g. controlling speed

Sensor arrangements

Pressure sensors near the expansion valve

Pressure sensors near the indoor heat exchanger

Pressure sensors near the outdoor heat exchanger

Temperature sensors near the indoor heat exchanger

Temperature sensors near the outdoor heat exchanger
2315/00. Crystallization prevention
2315/001. by using electro-caloric effects
2315/002. by using magneto-caloric effects
2315/0021. with a static fixed magnet
2315/0022. with a rotating or otherwise moving magnet
2315/0023. with modulation, influencing or enhancing an existing magnetic field
2315/003. by using thermionic electron cooling effects
2315/004. Inert heat-exchangers
2315/005. Regeneration
2315/006. Reversible sorption cycles
2315/007. Parallel systems thereafter

2317/00. Refrigeration system using an engine for driving a compressor
2317/001. of the internal combustion type

2321/00. Details of machines, plants, or systems, using electric or magnetic effects
2321/001. by using electro-caloric effects
2321/002. by using magneto-caloric effects
2321/0021. with a static fixed magnet
2321/0022. with a rotating or otherwise moving magnet
2321/0023. with modulation, influencing or enhancing an existing magnetic field
2321/003. by using thermionic electron cooling effects
2321/004. using Peltier effects; using Nernst-Ettinghausen effects
2321/0041. by using thermionic electron cooling effects
2321/005. Control thereof
2321/006. of fans
2321/007. of electric power, current or voltage
2321/008. Mounting details thereof
2321/0010. of fans
2321/0011. of electric power, current or voltage
2321/0012. Mounting details thereof
2321/0013. Control thereof
2321/0014. of fans
2321/0015. of electric power, current or voltage
2321/0016. Mounting details thereof
2321/0017. Control thereof
2321/0018. of fans
2321/0019. of electric power, current or voltage
2321/002. by using electro-caloric effects
2321/004. using Peltier effects; using Nernst-Ettinghausen effects
2321/005. Control thereof
2321/006. of fans
2321/007. of electric power, current or voltage
2321/008. Mounting details thereof
2321/009. Control thereof
2321/0010. of fans
2321/0011. of electric power, current or voltage
2321/0012. Mounting details thereof
2321/0013. Control thereof
2321/0014. of fans
2321/0015. of electric power, current or voltage
2321/0016. Mounting details thereof
2321/0017. Control thereof
2321/0018. of fans
2321/0019. of electric power, current or voltage

2327/00. Details of evaporators; Details of condensers
2327/001. Details of evaporators
2327/002. Details of condensers
2327/003. Condensers made by assembling plate-like or laminated elements
2327/004. Condensers with an integrated receiver
2327/005. containing a drier or a filter
2327/006. characterised by the mechanical fixation of the receiver to the header
2327/007. the receiver being positioned horizontally
2327/008. where the flow of refrigerant through the condenser receiver is split into two or more flows, each flow following a different path through the condenser receiver
2327/009. with throttle portions
2327/010. characterised by the refrigerant tubes connecting the header of the condenser to the receiver; Inlet or outlet connections to receiver
2327/011. Condensers made by assembling a tube on a plate-like element or between plate-like elements
2327/012. Condensers with refrigerant heat exchange tubes positioned inside or around a vessel containing water or pcm to cool the refrigerant gas
2327/013. Water-cooled condensers

2334/00. Details of ejectors not being used as compression device; Details of flow restrictors or expansion valves
2334/001. Ejectors not being used as compression device
2334/0011. Ejectors with the cooled primary flow at reduced or low pressure
2334/0012. Ejectors with the cooled primary flow at high pressure
2334/0013. Ejector control arrangements
2334/0014. Ejectors with a high pressure hot primary flow from a compressor discharge
2334/0015. using two or more ejectors
2334/0016. Ejectors for creating an oil recirculation
2334/0017. Details of flow restrictors or expansion valves
2334/0018. Bidirectional expansion restrictors
2334/0019. Capillary expansion valves
2334/002. Feed forward expansion valves
2334/003. Superheater expansion valves
2334/004. Electric expansion valves
2334/005. actuated by electric heating means, e.g. a heated bimetallic element
2334/006. being opened and closed cyclically, e.g. with pulse width modulation
2334/007. actuated by an electric motor
2334/008. Refrigeration circuits using more than one expansion valve
2334/009. arranged in parallel
2334/010. arranged in series
2334/011. Expansion valves having a pilot valve
2334/012. the pilot valve is electrically actuated
2334/013. Expansion valves combined with a sensor
2334/014. the sensor is heated
2334/015. the sensor contains sorbent materials
2334/016. the sensor is disposed in the suction line and influenced by the temperature or the pressure of the suction gas

2339/00. Details of evaporators; Details of condensers
2347/00 Details for preventing or removing deposits or corrosion
2347/02 Details of defrosting cycles
2347/03 Alternate defrosting
2347/04 Cool gas defrosting
2347/05 Set point defrosting

2400/00 General features or devices for refrigeration machines, plants or systems, combined heating and refrigeration systems or heat-pump systems, i.e. not limited to a particular subgroup of F25B
2400/01 Heaters
2400/02 Centrifugal separation of gas, liquid or oil
2400/03 Suction accumulators with deflectors
2400/04 Refrigeration circuit bypassing means
2400/05 for the compressor
2400/06 for the condenser
2400/07 for the desuperheater
2400/08 for the ejector
2400/09 for the evaporator
2400/10 for the expansion valve or capillary tube
2400/11 for the filter or drier
2400/12 for the receiver
2400/13 for the subcooler
2400/14 for the superheater
2400/15 Compression system with heat exchange between particular parts of the system
2400/16 between the accumulator and another part of the cycle
2400/17 between the capillary tube and another part of the refrigeration cycle
2400/18 between the storage receiver and another part of the system
2400/19 between the suction tube of the compressor and another part of the cycle
2400/20 Several compression cycles arranged in parallel
2400/21 the capacity of the first system being different from the second
2400/22 Details of compressors or related parts
2400/23 Compressor mounted in a housing in which a condenser is integrated
2400/24 Intercoolers therefor
2400/25 Linear compressors
2400/26 with multiple cylinders
2400/27 with parallel compressors
2400/28 the compressors having different capacities
2400/29 having multiple cylinders driven by a rotating swash plate

2400/077 Compressor control units, e.g. terminal boxes, mounted on the compressor casing wall containing for example starter, protection switches or connector contacts
2400/08 Refrigeration machines, plants and systems having means for detecting the concentration of a refrigerant
2400/09 Refrigeration machines, plants and systems having means for detecting the concentration of a sorbent solution
2400/10 Drop catchers
2400/11 Refrigerant conversion
2400/12 Inflammable refrigerants
2400/13 Economisers
2400/14 Power generation using energy from the expansion of the refrigerant
2400/15 the extracted power is not recycled back in the refrigerant circuit
2400/16 Modules for refrigeration systems
2400/17 Refrigeration systems for supermarkets
2400/18 Separators
2400/19 Refrigeration machines, plants and systems having means for detecting the concentration of a sorbent solution
2400/20 Switches or connector contacts
2400/21 containing for example starter, protection switches or connector contacts
2500/00 Problems to be solved
2500/01 Geometry problems, e.g. for reducing size
2500/02 Increasing the heating capacity of a reversible cycle during cold outdoor conditions
2500/03 Cavitations
2500/04 Clogging
2500/05 Cost reduction
2500/06 Damage
2500/07 Exceeding a certain pressure value in a refrigeration component or cycle
2500/08 Exceeding a certain temperature value in a refrigeration component or cycle
2500/09 Improving heat transfers
2500/10 Reducing heat transfers
2500/11 Sound
2500/12 Vibrations
2500/13 the presence of moisture in a refrigeration component or cycle
2500/14 Hunting, i.e. oscillation of controlled refrigeration variables reaching undesirable values
2500/15 Lubrication
2500/16 Size reduction
2500/17 Optimization, e.g. high integration of refrigeration components
2500/18 Calculation of parameters
2500/19 Reduction of parts
2500/20 Preventing, detecting or repairing leaks of refrigeration fluids
2500/21 Preventing leaks from developing
2500/22 Detecting refrigerant leaks
2600/00  Control issues

2600/01  Timing
2600/02  Compressor control
2600/021  Inverters therefor
2600/022  for multi-stage operation
2600/023  controlling swash plate angles
2600/024  by controlling the electric parameters, e.g. current or voltage
2600/025  by controlling speed
2600/0251  with on-off operation
2600/0252  with two speeds
2600/0253  with variable speed
2600/026  by controlling unloaders
2600/0261  external to the compressor
2600/0262  internal to the compressor
2600/027  by controlling pressure
2600/0271  the discharge pressure
2600/0272  the suction pressure
2600/0273  Refrigerant levels
2600/0274  Remote controls
2600/0275  Fan speed control
2600/0276  of condenser fans
2600/0277  of evaporator fans
2600/0278  Pump speed control
2600/0279  during shut down
2600/028  by controlling the pressure of the condenser
2600/0281  Refrigerant outlet condenser temperature
2600/0282  Refrigerant outlet evaporator temperature
2600/0283  Time delays
2600/0284  Control of valves
2600/0285  Bypass valves
2600/0286  Condenser exit valves
2600/0287  Fixed-differential control valves
2600/0288  Flow-diverting valves
2600/0289  Economiser valves
2600/029  Evaporator distribution valves
2600/0291  Expansion valves
2600/0292  Flow valves
2600/0293  Head-pressure valves
2600/0294  On-off valves
2600/0295  On-off valves controlled by pulse signals
2600/0296  Receiver valves
2600/0297  Pressure relief valves

2700/00  Sensing or detecting of parameters; Sensors therefor

2700/01  Sensors determining characteristics of the burner for a generator
2700/02  Humidity
2700/03  Oil level
2700/04  Refrigerant level

2700/05  Load shedding of a compressor
2700/06  Piston positions of a compressor
2700/11  Sensor to detect if defrost is necessary
2700/111  using an emitter and receiver, e.g. sensing by emitting light or other radiation and receiving reflection by a sensor
2700/13  Mass flow of refrigerants
2700/131  at the outlet of a subcooler
2700/133  through the condenser
2700/1331  at the inlet
2700/1332  at the outlet
2700/135  through the evaporator
2700/1351  of the cooled fluid upstream or downstream of the evaporator
2700/1352  at the inlet
2700/1353  at the outlet
2700/15  Power, e.g. by voltage or current
2700/151  of the compressor motor
2700/17  Speeds
2700/171  of the compressor
2700/172  of the condenser fan
2700/173  of the evaporator fan
2700/19  Pressures
2700/191  near an expansion valve
2700/193  of the compressor
2700/1931  Discharge pressures
2700/1932  Oil pressures
2700/1933  Suction pressures
2700/195  of the condenser
2700/197  of the evaporator
2700/1971  Temperatures
2700/201  in a bypass
2700/2011  of the gas cooler
2700/2012  near a heat exchanger
2700/2013  of an indoor room or compartment
2700/2015  Oil temperatures
2700/2016  of fresh outdoor air
2700/2017  of a Peltier element
2700/2018  of a receiver
2700/2019  of a separator
2700/20191  of a heat storage receiver
2700/20193  of a suction accumulator
2700/20195  of a compressor or the drive means therefor
2700/201951  at the suction side of the compressor
2700/201952  at the discharge side of the compressor
2700/201953  of electronic components
2700/201954  of an inverter
2700/201955  of the oil
2700/201956  of the motor
2700/2019561  at the coil or rotor
2700/20196  of a condenser
2700/201961  the fluid cooled by the condenser
2700/201962  of the refrigerant at the inlet of the condenser
2700/201963  of the refrigerant at the outlet of the condenser
2700/20197  of an evaporator
2700/201971  of the fluid cooled by the evaporator
2700/201972  at the inlet
2700/201973  at the outlet
2700/201974  of the refrigerant at the inlet of the evaporator
2700/201975  of the refrigerant at the outlet of the evaporator