Information for heat pump space heaters and heat pump combination heaters

**Warm climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoLogic, CTC EcoPart i435 PRO | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | | - |
| Water-to-water heat pump: | No | Controller class: | VII | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 3,5 | % |
| Low-temperature heat pump: | No | Package efficiency: | 141 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **34** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **na** | kW |
| T j = + 2 °C | *Pdh* | **31,8** | kW |
| T j = + 7 °C | *Pdh* | **32,0** | kW |
| T j = + 12 °C | *Pdh* | **33** | kW |
| T j = bivalent temperature | *Pdh* | **31,8** | kW |
| T j = operation limit temperature | *Pdh* | **na** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **3** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,99** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,018** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,008** | *kW* |
| Standby mode | $P_{SB}$ | **0,018** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **12630** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **137** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **na** | - |
| T j = +2 °C | *COPd* | **3,07** | - |
| T j = +7 °C | *COPd* | **3,42** | - |
| T j = +12 °C | *COPd* | **4,09** | - |
| T j = bivalent temperature | *COPd* | **3,17** | - |
| T j = operation limit temperature | *COPd* | **na** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **2,6** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,1/3,1** | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | **na** | |
| Daily electricity consumption | Qelec | **na** | kWh |
| Annual electricity consumption | AEC | **na** | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | **na** | % |
| Daily fuel consumption | $Q_{fuel}$ | **na** | kWh |
| Annual fuel consumption | AFC | **na** | GJ |

Contact details: Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Warm climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoLogic, CTC EcoPart i435 PRO | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | | - |
| Water-to-water heat pump: | No | Controller class: | VII | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 3,5 | % |
| Low-temperature heat pump: | No | Package efficiency: | 184 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | 36 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | na | kW |
| T j = + 2 °C | *Pdh* | 33,8 | kW |
| T j = + 7 °C | *Pdh* | 34,0 | kW |
| T j = + 12 °C | *Pdh* | 34,6 | kW |
| T j = bivalent temperature | *Pdh* | 33,8 | kW |
| T j = operation limit temperature | *Pdh* | na | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | na | kW |
| Bivalent temperature | $T_{biv}$ | 3 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | na | kW |
| Degradation co-efficient (**) | *Cdh* | 0,99 | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | 0,018 | *kW* |
| Thermostat-off mode | $P_{TO}$ | 0,027 | *kW* |
| Standby mode | $P_{SB}$ | 0,018 | *kW* |
| Crankcase heater mode | $P_{CK}$ | 0,000 | *kW* |
| Other items | | | |
| Capacity control | | Fixed | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | 56/na | *dB* |
| Annual energy consumption | $Q_{HE}$ | 10360 | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | 180 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | na | - |
| T j = +2 °C | *COPd* | 4,55 | - |
| T j = +7 °C | *COPd* | 4,78 | - |
| T j = +12 °C | *COPd* | 5,06 | - |
| T j = bivalent temperature | *COPd* | 4,63 | - |
| T j = operation limit temperature | *COPd* | na | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | na | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | na | °C |
| Cycling interval efficiency | *COPcyc* | na | - |
| Heating water operating limit temperature | *WTOL* | 65 | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | 2,8 | *kW* |
| Type of energy input | | Electric | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | na | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | 3,8/3,8 | *m3/h* |

For heat pump combination heater:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Declared load profile** | | na | | **Water heating energy efficiency** | $\eta_{wh}$ | na | % |
| Daily electricity consumption | Qelec | na | kWh | Daily fuel consumption | $Q_{fuel}$ | na | kWh |
| Annual electricity consumption | AEC | na | kWh | Annual fuel consumption | AFC | na | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Average climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoLogic, CTC EcoPart i435 PRO | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | A++ | - |
| Water-to-water heat pump: | No | Controller class: | VII | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 3,5 | % |
| Low-temperature heat pump: | No | Package efficiency: | 141 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | A++ | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | 36 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | 32,0 | kW |
| T j = + 2 °C | *Pdh* | 32,2 | kW |
| T j = + 7 °C | *Pdh* | 32,8 | kW |
| T j = + 12 °C | *Pdh* | 33,4 | kW |
| T j = bivalent temperature | *Pdh* | 32,0 | kW |
| T j = operation limit temperature | *Pdh* | na | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | na | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | na | kW |
| Degradation co-efficient (**) | *Cdh* | 0,99 | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | 0,018 | *kW* |
| Thermostat-off mode | $P_{TO}$ | 0,008 | *kW* |
| Standby mode | $P_{SB}$ | 0,018 | *kW* |
| Crankcase heater mode | $P_{CK}$ | 0,000 | *kW* |
| Other items | | | |
| Capacity control | | Fixed | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | 56/na | *dB* |
| Annual energy consumption | $Q_{HE}$ | 20572 | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | 137 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | 3,23 | - |
| T j = +2 °C | *COPd* | 3,60 | - |
| T j = +7 °C | *COPd* | 3,97 | - |
| T j = +12 °C | *COPd* | 4,36 | - |
| T j = bivalent temperature | *COPd* | 3,23 | - |
| T j = operation limit temperature | *COPd* | na | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | na | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | na | °C |
| Cycling interval efficiency | *COPcyc* | na | - |
| Heating water operating limit temperature | *WTOL* | 65 | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | 4,4 | *kW* |
| Type of energy input | | *Electric* | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | na | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | 3,1/3,1 | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | na | |
| Daily electricity consumption | Qelec | na | kWh |
| Annual electricity consumption | AEC | na | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | na | % |
| Daily fuel consumption | $Q_{fuel}$ | na | kWh |
| Annual fuel consumption | AFC | na | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Average climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoLogic, CTC EcoPart i435 PRO | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | A++ | - |
| Water-to-water heat pump: | No | Controller class: | VII | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 3,5 | % |
| Low-temperature heat pump: | No | Package efficiency: | 185 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | A+++ | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | 38 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | 33,8 | kW |
| T j = + 2 °C | *Pdh* | 34,2 | kW |
| T j = + 7 °C | *Pdh* | 34,4 | kW |
| T j = + 12 °C | *Pdh* | 34,8 | kW |
| T j = bivalent temperature | *Pdh* | 33,8 | kW |
| T j = operation limit temperature | *Pdh* | na | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | na | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | na | kW |
| Degradation co-efficient (**) | *Cdh* | 0,99 | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | 0,018 | *kW* |
| Thermostat-off mode | $P_{TO}$ | 0,027 | *kW* |
| Standby mode | $P_{SB}$ | 0,018 | *kW* |
| Crankcase heater mode | $P_{CK}$ | 0,000 | *kW* |
| Other items | | | |
| Capacity control | | Fixed | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | 56/na | *dB* |
| Annual energy consumption | $Q_{HE}$ | 16724 | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | 181 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | 4,64 | - |
| T j = +2 °C | *COPd* | 4,83 | - |
| T j = +7 °C | *COPd* | 5,01 | - |
| T j = +12 °C | *COPd* | 5,18 | - |
| T j = bivalent temperature | *COPd* | 4,64 | - |
| T j = operation limit temperature | *COPd* | na | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | na | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | na | °C |
| Cycling interval efficiency | *COPcyc* | na | - |
| Heating water operating limit temperature | *WTOL* | 65 | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | 4,6 | *kW* |
| Type of energy input | | *Electric* | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | na | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | 3,8/3,8 | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | na | |
| Daily electricity consumption | Qelec | na | kWh |
| Annual electricity consumption | AEC | na | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | na | % |
| Daily fuel consumption | $Q_{fuel}$ | na | kWh |
| Annual fuel consumption | AFC | na | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Cold climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | **CTC EcoPart 435 + CTC EcoLogic, CTC EcoPart i435 PRO** | | | |
| Air-to-water heat pump: | **No** | Energy efficiency class: | | - |
| Water-to-water heat pump: | **No** | Controller class: | **VII** | - |
| Brine-to-water heat pump: | **Yes** | Controller contribution: | **3,5** | % |
| Low-temperature heat pump: | **No** | Package efficiency: | **145** | % |
| Equipped with a supplementary heater: | **No** | Package efficiency class: | | - |
| Heat pump combination heater: | **No** | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **34** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **32,2** | kW |
| T j = + 2 °C | *Pdh* | **32,8** | kW |
| T j = + 7 °C | *Pdh* | **33,2** | kW |
| T j = + 12 °C | *Pdh* | **33,6** | kW |
| T j = bivalent temperature | *Pdh* | **31,8** | kW |
| T j = operation limit temperature | *Pdh* | **na** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **-19** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,99** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,018** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,008** | *kW* |
| Standby mode | $P_{SB}$ | **0,018** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **23108** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **140** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **3,51** | - |
| T j = +2 °C | *COPd* | **3,89** | - |
| T j = +7 °C | *COPd* | **4,24** | - |
| T j = +12 °C | *COPd* | **4,50** | - |
| T j = bivalent temperature | *COPd* | **3,19** | - |
| T j = operation limit temperature | *COPd* | **na** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **2,8** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,1/3,1** | *m3/h* |

For heat pump combination heater:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Declared load profile** | | **na** | | **Water heating energy efficiency** | $\eta_{wh}$ | **na** | % |
| Daily electricity consumption | Qelec | **na** | kWh | Daily fuel consumption | $Q_{fuel}$ | **na** | kWh |
| Annual electricity consumption | AEC | **na** | kWh | Annual fuel consumption | AFC | **na** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Cold climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoLogic, CTC EcoPart i435 PRO | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | | - |
| Water-to-water heat pump: | No | Controller class: | VII | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 3,5 | % |
| Low-temperature heat pump: | No | Package efficiency: | 188 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | 36 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | 34,2 | kW |
| T j = + 2 °C | *Pdh* | 34,4 | kW |
| T j = + 7 °C | *Pdh* | 34,6 | kW |
| T j = + 12 °C | *Pdh* | 34,6 | kW |
| T j = bivalent temperature | *Pdh* | 33,8 | kW |
| T j = operation limit temperature | *Pdh* | na | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | na | kW |
| Bivalent temperature | $T_{biv}$ | -20 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | na | kW |
| Degradation co-efficient (**) | *Cdh* | 0,99 | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | 0,018 | *kW* |
| Thermostat-off mode | $P_{TO}$ | 0,027 | *kW* |
| Standby mode | $P_{SB}$ | 0,018 | *kW* |
| Crankcase heater mode | $P_{CK}$ | 0,000 | *kW* |
| Other items | | | |
| Capacity control | | Fixed | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | 56/na | *dB* |
| Annual energy consumption | $Q_{HE}$ | 18332 | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | 184 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | 4,84 | - |
| T j = +2 °C | *COPd* | 5,01 | - |
| T j = +7 °C | *COPd* | 5,13 | - |
| T j = +12 °C | *COPd* | 5,15 | - |
| T j = bivalent temperature | *COPd* | 4,61 | - |
| T j = operation limit temperature | *COPd* | na | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | na | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | na | °C |
| Cycling interval efficiency | *COPcyc* | na | - |
| Heating water operating limit temperature | *WTOL* | 65 | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | 2,0 | *kW* |
| Type of energy input | | *Electric* | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | na | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | 3,8/3,8 | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | na | |
| Daily electricity consumption | Qelec | na | kWh |
| Annual electricity consumption | AEC | na | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | na | % |
| Daily fuel consumption | $Q_{fuel}$ | na | kWh |
| Annual fuel consumption | AFC | na | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Warm climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | **CTC EcoPart 435 + CTC EcoZenith 550** | | | |
| Air-to-water heat pump: | **No** | Energy efficiency class: | | - |
| Water-to-water heat pump: | **No** | Controller class: | **VII** | - |
| Brine-to-water heat pump: | **Yes** | Controller contribution: | **3,5** | % |
| Low-temperature heat pump: | **No** | Package efficiency: | **123** | % |
| Equipped with a supplementary heater: | **Yes** | Package efficiency class: | | - |
| Heat pump combination heater: | **Yes** | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **34** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **na** | kW |
| T j = + 2 °C | *Pdh* | **31,7** | kW |
| T j = + 7 °C | *Pdh* | **32,1** | kW |
| T j = + 12 °C | *Pdh* | **33,0** | kW |
| T j = bivalent temperature | *Pdh* | **31,8** | kW |
| T j = operation limit temperature | *Pdh* | **31,7** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **3** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,98** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,025** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,169** | *kW* |
| Standby mode | $P_{SB}$ | **0,025** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **14445** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **119** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **na** | - |
| T j = +2 °C | *COPd* | **2,77** | - |
| T j = +7 °C | *COPd* | **3,07** | - |
| T j = +12 °C | *COPd* | **3,64** | - |
| T j = bivalent temperature | *COPd* | **2,85** | - |
| T j = operation limit temperature | *COPd* | **2,77** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **2,5** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,1/3,1** | *m3/h* |

For heat pump combination heater:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Declared load profile** | | **XXL** | | **Water heating energy efficiency** | $\eta_{wh}$ | **100** | % |
| Daily electricity consumption | Qelec | **9,851** | kWh | Daily fuel consumption | $Q_{fuel}$ | **NA** | kWh |
| Annual electricity consumption | AEC | **2167** | kWh | Annual fuel consumption | AFC | **NA** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Warm climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | **CTC EcoPart 435 + CTC EcoZenith 550** | | | |
| Air-to-water heat pump: | **No** | Energy efficiency class: | | - |
| Water-to-water heat pump: | **No** | Controller class: | **VII** | - |
| Brine-to-water heat pump: | **Yes** | Controller contribution: | **3,5** | % |
| Low-temperature heat pump: | **No** | Package efficiency: | **147** | % |
| Equipped with a supplementary heater: | **Yes** | Package efficiency class: | | - |
| Heat pump combination heater: | **Yes** | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **40** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **na** | kW |
| T j = + 2 °C | *Pdh* | **33,7** | kW |
| T j = + 7 °C | *Pdh* | **34,1** | kW |
| T j = + 12 °C | *Pdh* | **34,6** | kW |
| T j = bivalent temperature | *Pdh* | **34,0** | kW |
| T j = operation limit temperature | *Pdh* | **33,7** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **4** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,94** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,003** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,497** | *kW* |
| Standby mode | $P_{SB}$ | **0,025** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **4964** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **143** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **na** | - |
| T j = +2 °C | *COPd* | **4,01** | - |
| T j = +7 °C | *COPd* | **4,22** | - |
| T j = +12 °C | *COPd* | **4,44** | - |
| T j = bivalent temperature | *COPd* | **4,13** | - |
| T j = operation limit temperature | *COPd* | **4,01** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **5,9** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,8/3,8** | *m3/h* |

For heat pump combination heater:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Declared load profile** | | **XXL** | | **Water heating energy efficiency** | $\eta_{wh}$ | **100** | % |
| Daily electricity consumption | Qelec | **9,851** | kWh | Daily fuel consumption | $Q_{fuel}$ | **NA** | kWh |
| Annual electricity consumption | AEC | **2167** | kWh | Annual fuel consumption | AFC | **NA** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Average climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | **CTC EcoPart 435 + CTC EcoZenith 550** | | | |
| Air-to-water heat pump: | **No** | Energy efficiency class: | **A+** | - |
| Water-to-water heat pump: | **No** | Controller class: | **VII** | - |
| Brine-to-water heat pump: | **Yes** | Controller contribution: | **3,5** | % |
| Low-temperature heat pump: | **No** | Package efficiency: | **124** | % |
| Equipped with a supplementary heater: | **Yes** | Package efficiency class: | **A+** | - |
| Heat pump combination heater: | **Yes** | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **38** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **31,9** | kW |
| T j = + 2 °C | *Pdh* | **32,3** | kW |
| T j = + 7 °C | *Pdh* | **32,9** | kW |
| T j = + 12 °C | *Pdh* | **33,5** | kW |
| T j = bivalent temperature | *Pdh* | **32,0** | kW |
| T j = operation limit temperature | *Pdh* | **31,7** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **-6** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,98** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,025** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,169** | *kW* |
| Standby mode | $P_{SB}$ | **0,025** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **24390** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **120** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **2,91** | - |
| T j = +2 °C | *COPd* | **3,24** | - |
| T j = +7 °C | *COPd* | **3,55** | - |
| T j = +12 °C | *COPd* | **3,86** | - |
| T j = bivalent temperature | *COPd* | **2,96** | - |
| T j = operation limit temperature | *COPd* | **2,77** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **6,0** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,1/3,1** | *m3/h* |

For heat pump combination heater:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Declared load profile** | | **XXL** | | **Water heating energy efficiency** | $\eta_{wh}$ | **100** | % |
| Daily electricity consumption | Qelec | **9,851** | kWh | Daily fuel consumption | $Q_{fuel}$ | **NA** | kWh |
| Annual electricity consumption | AEC | **2167** | kWh | Annual fuel consumption | AFC | **NA** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Average climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | **CTC EcoPart 435 + CTC EcoZenith 550** | | | |
| Air-to-water heat pump: | **No** | Energy efficiency class: | **A++** | - |
| Water-to-water heat pump: | **No** | Controller class: | **VII** | - |
| Brine-to-water heat pump: | **Yes** | Controller contribution: | **3,5** | % |
| Low-temperature heat pump: | **No** | Package efficiency: | **153** | % |
| Equipped with a supplementary heater: | **Yes** | Package efficiency class: | **A+++** | - |
| Heat pump combination heater: | **Yes** | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **40** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **33,9** | kW |
| T j = + 2 °C | *Pdh* | **34,2** | kW |
| T j = + 7 °C | *Pdh* | **34,5** | kW |
| T j = + 12 °C | *Pdh* | **34,7** | kW |
| T j = bivalent temperature | *Pdh* | **34,0** | kW |
| T j = operation limit temperature | *Pdh* | **33,7** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **-6** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,93** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,025** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,497** | *kW* |
| Standby mode | $P_{SB}$ | **0,025** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **21141** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **149** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **4,09** | - |
| T j = +2 °C | *COPd* | **4,25** | - |
| T j = +7 °C | *COPd* | **4,39** | - |
| T j = +12 °C | *COPd* | **4,53** | - |
| T j = bivalent temperature | *COPd* | **4,12** | - |
| T j = operation limit temperature | *COPd* | **4,01** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **6,4** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,8/3,8** | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | **XXL** | |
| Daily electricity consumption | Qelec | **9,851** | kWh |
| Annual electricity consumption | AEC | **2167** | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | **100** | % |
| Daily fuel consumption | $Q_{fuel}$ | **NA** | kWh |
| Annual fuel consumption | AFC | **NA** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Cold climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | **CTC EcoPart 435 + CTC EcoZenith 550** | | | |
| Air-to-water heat pump: | **No** | Energy efficiency class: | | - |
| Water-to-water heat pump: | **No** | Controller class: | **VII** | - |
| Brine-to-water heat pump: | **Yes** | Controller contribution: | **3,5** | % |
| Low-temperature heat pump: | **No** | Package efficiency: | **126** | % |
| Equipped with a supplementary heater: | **Yes** | Package efficiency class: | | - |
| Heat pump combination heater: | **Yes** | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **37** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **32,2** | kW |
| T j = + 2 °C | *Pdh* | **32,7** | kW |
| T j = + 7 °C | *Pdh* | **33,3** | kW |
| T j = + 12 °C | *Pdh* | **33,7** | kW |
| T j = bivalent temperature | *Pdh* | **31,9** | kW |
| T j = operation limit temperature | *Pdh* | **31,7** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **-17** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,98** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,025** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,169** | *kW* |
| Standby mode | $P_{SB}$ | **0,025** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **27998** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **122** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **3,17** | - |
| T j = +2 °C | *COPd* | **3,48** | - |
| T j = +7 °C | *COPd* | **3,76** | - |
| T j = +12 °C | *COPd* | **3,97** | - |
| T j = bivalent temperature | *COPd* | **2,94** | - |
| T j = operation limit temperature | *COPd* | **2,77** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **5,0** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,1/3,1** | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | **XXL** | |
| Daily electricity consumption | Qelec | **9,851** | kWh |
| Annual electricity consumption | AEC | **2167** | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | **100** | % |
| Daily fuel consumption | $Q_{fuel}$ | **NA** | kWh |
| Annual fuel consumption | AFC | **NA** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Cold climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | **CTC EcoPart 435 + CTC EcoZenith 550** | | | |
| Air-to-water heat pump: | **No** | Energy efficiency class: | | - |
| Water-to-water heat pump: | **No** | Controller class: | **VII** | - |
| Brine-to-water heat pump: | **Yes** | Controller contribution: | **3,5** | % |
| Low-temperature heat pump: | **No** | Package efficiency: | **153** | % |
| Equipped with a supplementary heater: | **Yes** | Package efficiency class: | | - |
| Heat pump combination heater: | **Yes** | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **39** | kW |

Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j

| | | | |
|---|---|---|---|
| T j = – 7 °C | *Pdh* | **34,2** | kW |
| T j = + 2 °C | *Pdh* | **34,5** | kW |
| T j = + 7 °C | *Pdh* | **34,7** | kW |
| T j = + 12 °C | *Pdh* | **34,7** | kW |
| T j = bivalent temperature | *Pdh* | **34,0** | kW |
| T j = operation limit temperature | *Pdh* | **33,7** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **-17** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,93** | - |

Power consumption in modes other than active mode

| | | | |
|---|---|---|---|
| Off mode | $P_{OFF}$ | **0,025** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,497** | *kW* |
| Standby mode | $P_{SB}$ | **0,025** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |

Other items

| | | | |
|---|---|---|---|
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **24650** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **149** | % |

Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j

| | | | |
|---|---|---|---|
| T j = – 7 °C | *COPd* | **4,27** | - |
| T j = +2 °C | *COPd* | **4,40** | - |
| T j = +7 °C | *COPd* | **4,49** | - |
| T j = +12 °C | *COPd* | **4,51** | - |
| T j = bivalent temperature | *COPd* | **4,14** | - |
| T j = operation limit temperature | *COPd* | **4,01** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |

Supplementary heater

| | | | |
|---|---|---|---|
| Rated heat output (*) | *Psup* | **5,4** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,8/3,8** | *m3/h* |

For heat pump combination heater:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Declared load profile** | | **XXL** | | **Water heating energy efficiency** | $\eta_{wh}$ | **100** | % |
| Daily electricity consumption | Qelec | **9,851** | kWh | Daily fuel consumption | $Q_{fuel}$ | **NA** | kWh |
| Annual electricity consumption | AEC | **2167** | kWh | Annual fuel consumption | AFC | **NA** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Warm climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoBasic | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | | - |
| Water-to-water heat pump: | No | Controller class: | I | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 1 | % |
| Low-temperature heat pump: | No | Package efficiency: | 121 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **38** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **na** | kW |
| T j = + 2 °C | *Pdh* | **31,8** | kW |
| T j = + 7 °C | *Pdh* | **31,8** | kW |
| T j = + 12 °C | *Pdh* | **31,8** | kW |
| T j = bivalent temperature | *Pdh* | **31,8** | kW |
| T j = operation limit temperature | *Pdh* | **31,8** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **3** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **1,00** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,007** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,008** | *kW* |
| Standby mode | $P_{SB}$ | **0,007** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **15742** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **120** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **na** | - |
| T j = +2 °C | *COPd* | **3,07** | - |
| T j = +7 °C | *COPd* | **2,98** | - |
| T j = +12 °C | *COPd* | **2,88** | - |
| T j = bivalent temperature | *COPd* | **3,07** | - |
| T j = operation limit temperature | *COPd* | **3,07** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **2,4** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,1/3,1** | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | **na** | |
| Daily electricity consumption | Qelec | **na** | kWh |
| Annual electricity consumption | AEC | **na** | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | **na** | % |
| Daily fuel consumption | $Q_{fuel}$ | **na** | kWh |
| Annual fuel consumption | AFC | **na** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Warm climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoBasic | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | | - |
| Water-to-water heat pump: | No | Controller class: | I | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 1 | % |
| Low-temperature heat pump: | No | Package efficiency: | 162 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **36** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **na** | kW |
| T j = + 2 °C | *Pdh* | **33,8** | kW |
| T j = + 7 °C | *Pdh* | **33,6** | kW |
| T j = + 12 °C | *Pdh* | **33,2** | kW |
| T j = bivalent temperature | *Pdh* | **33,8** | kW |
| T j = operation limit temperature | *Pdh* | **33,8** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **3** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,99** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,007** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,027** | *kW* |
| Standby mode | $P_{SB}$ | **0,007** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **11502** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **161** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **na** | - |
| T j = +2 °C | *COPd* | **4,55** | - |
| T j = +7 °C | *COPd* | **4,41** | - |
| T j = +12 °C | *COPd* | **4,23** | - |
| T j = bivalent temperature | *COPd* | **4,55** | - |
| T j = operation limit temperature | *COPd* | **4,55** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **2,6** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,8/3,8** | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | **na** | |
| Daily electricity consumption | Qelec | **na** | kWh |
| Annual electricity consumption | AEC | **na** | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | **na** | % |
| Daily fuel consumption | $Q_{fuel}$ | **na** | kWh |
| Annual fuel consumption | AFC | **na** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Average climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoBasic | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | A+ | - |
| Water-to-water heat pump: | No | Controller class: | I | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 1 | % |
| Low-temperature heat pump: | No | Package efficiency: | 110 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | A+ | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **36** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **31,8** | kW |
| T j = + 2 °C | *Pdh* | **31,8** | kW |
| T j = + 7 °C | *Pdh* | **31,8** | kW |
| T j = + 12 °C | *Pdh* | **31,8** | kW |
| T j = bivalent temperature | *Pdh* | **31,8** | kW |
| T j = operation limit temperature | *Pdh* | **31,8** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **-7** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **1,00** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,007** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,008** | *kW* |
| Standby mode | $P_{SB}$ | **0,007** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **25340** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **109** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **3,07** | - |
| T j = +2 °C | *COPd* | **2,96** | - |
| T j = +7 °C | *COPd* | **2,90** | - |
| T j = +12 °C | *COPd* | **2,84** | - |
| T j = bivalent temperature | *COPd* | **3,07** | - |
| T j = operation limit temperature | *COPd* | **3,07** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **4,2** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,1/3,1** | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | **na** | |
| Daily electricity consumption | Qelec | **na** | kWh |
| Annual electricity consumption | AEC | **na** | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | **na** | % |
| Daily fuel consumption | $Q_{fuel}$ | **na** | kWh |
| Annual fuel consumption | AFC | **na** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Average climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoLogic | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | A++ | - |
| Water-to-water heat pump: | No | Controller class: | I | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 1 | % |
| Low-temperature heat pump: | No | Package efficiency: | 164 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | A+++ | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **38** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **33,8** | kW |
| T j = + 2 °C | *Pdh* | **33,4** | kW |
| T j = + 7 °C | *Pdh* | **33,4** | kW |
| T j = + 12 °C | *Pdh* | **33,2** | kW |
| T j = bivalent temperature | *Pdh* | **33,8** | kW |
| T j = operation limit temperature | *Pdh* | **33,8** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **-7** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,99** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,007** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,027** | *kW* |
| Standby mode | $P_{SB}$ | **0,007** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **18434** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **163** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **4,55** | - |
| T j = +2 °C | *COPd* | **4,37** | - |
| T j = +7 °C | *COPd* | **4,27** | - |
| T j = +12 °C | *COPd* | **4,17** | - |
| T j = bivalent temperature | *COPd* | **4,55** | - |
| T j = operation limit temperature | *COPd* | **4,55** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **4,4** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,8/3,8** | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | **na** | |
| Daily electricity consumption | Qelec | **na** | kWh |
| Annual electricity consumption | AEC | **na** | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | **na** | % |
| Daily fuel consumption | $Q_{fuel}$ | **na** | kWh |
| Annual fuel consumption | AFC | **na** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Cold climate and High temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoBasic | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | | - |
| Water-to-water heat pump: | No | Controller class: | I | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 1 | % |
| Low-temperature heat pump: | No | Package efficiency: | 109 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **34** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **31,8** | kW |
| T j = + 2 °C | *Pdh* | **32,8** | kW |
| T j = + 7 °C | *Pdh* | **32,8** | kW |
| T j = + 12 °C | *Pdh* | **32,8** | kW |
| T j = bivalent temperature | *Pdh* | **32,8** | kW |
| T j = operation limit temperature | *Pdh* | **32,8** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **32,8** | kW |
| Bivalent temperature | $T_{biv}$ | **-20** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **1,00** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,007** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,008** | *kW* |
| Standby mode | $P_{SB}$ | **0,007** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **28406** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **108** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **2,97** | - |
| T j = +2 °C | *COPd* | **2,90** | - |
| T j = +7 °C | *COPd* | **2,86** | - |
| T j = +12 °C | *COPd* | **2,82** | - |
| T j = bivalent temperature | *COPd* | **3,07** | - |
| T j = operation limit temperature | *COPd* | **3,07** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **1,8** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,1/3,1** | *m3/h* |

For heat pump combination heater:

| | | | |
|---|---|---|---|
| **Declared load profile** | | **na** | |
| Daily electricity consumption | Qelec | **na** | kWh |
| Annual electricity consumption | AEC | **na** | kWh |

| | | | |
|---|---|---|---|
| **Water heating energy efficiency** | $\eta_{wh}$ | **na** | % |
| Daily fuel consumption | $Q_{fuel}$ | **na** | kWh |
| Annual fuel consumption | AFC | **na** | GJ |

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj). (**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

Information for heat pump space heaters and heat pump combination heaters

**Cold climate and Low temperature**

ENERTECH GROUP
Enertech AB, 341 26 Ljungby

| | | | | |
|---|---|---|---|---|
| Model(s): | CTC EcoPart 435 + CTC EcoBasic | | | |
| Air-to-water heat pump: | No | Energy efficiency class: | | - |
| Water-to-water heat pump: | No | Controller class: | I | - |
| Brine-to-water heat pump: | Yes | Controller contribution: | 1 | % |
| Low-temperature heat pump: | No | Package efficiency: | 163 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Rated heat output (*)** | *Prated* | **36** | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *Pdh* | **33,4** | kW |
| T j = + 2 °C | *Pdh* | **33,4** | kW |
| T j = + 7 °C | *Pdh* | **33,2** | kW |
| T j = + 12 °C | *Pdh* | **33,2** | kW |
| T j = bivalent temperature | *Pdh* | **33,8** | kW |
| T j = operation limit temperature | *Pdh* | **33,8** | kW |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *Pdh* | **na** | kW |
| Bivalent temperature | $T_{biv}$ | **-20** | °C |
| Cycling interval capacity for heating | $P_{cych}$ | **na** | kW |
| Degradation co-efficient (**) | *Cdh* | **0,99** | - |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{OFF}$ | **0,007** | *kW* |
| Thermostat-off mode | $P_{TO}$ | **0,027** | *kW* |
| Standby mode | $P_{SB}$ | **0,007** | *kW* |
| Crankcase heater mode | $P_{CK}$ | **0,000** | *kW* |
| Other items | | | |
| Capacity control | | **Fixed** | |
| Sound power level, indoors/ outdoors | $L_{WA}$ | **56/na** | *dB* |
| Annual energy consumption | $Q_{HE}$ | **20688** | *kWh* |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| **Seasonal space heating energy efficiency** | $\eta_s$ | **162** | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | |
| T j = – 7 °C | *COPd* | **4,38** | - |
| T j = +2 °C | *COPd* | **4,27** | - |
| T j = +7 °C | *COPd* | **4,21** | - |
| T j = +12 °C | *COPd* | **4,14** | - |
| T j = bivalent temperature | *COPd* | **4,55** | - |
| T j = operation limit temperature | *COPd* | **4,55** | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | *COPd* | **na** | - |
| For air-to-water heat pumps: Operation limit temperature | *TOL* | **na** | °C |
| Cycling interval efficiency | *COPcyc* | **na** | - |
| Heating water operating limit temperature | *WTOL* | **65** | °C |
| Supplementary heater | | | |
| Rated heat output (*) | *Psup* | **1,8** | *kW* |
| Type of energy input | | ***Electric*** | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | **na** | *m3/h* |
| For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | **3,8/3,8** | *m3/h* |

For heat pump combination heater:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Declared load profile** | | **na** | | **Water heating energy efficiency** | $\eta_{wh}$ | **na** | % |
| Daily electricity consumption | Qelec | **na** | kWh | Daily fuel consumption | $Q_{fuel}$ | **na** | kWh |
| Annual electricity consumption | AEC | **na** | kWh | Annual fuel consumption | AFC | **na** | GJ |

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