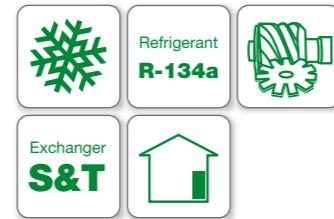


WHS E

WATER COOLED CHILLER WITH SCREW COMPRESSORS



Cooling capacity: 333 kW ÷ 1510 kW



GENERAL CHARACTERISTICS

- Stepless capacity control
- Independent circuit for each compressor
- Single-screw compressors; Star-Delta standard start
- Direct expansion shell and tube evaporator with single pass; shell and tube plates made of carbon steel; high efficiency copper tubes; insulation made of closed cells material; Victaulic water connections
- R134a refrigerant
- Shell and tube condensers; one per each circuit; shell and tube plates made of carbon steel; high efficiency copper tubes; GAS water connections
- Micro Tech III controller compatible with BMS

VERSIONS

| | |
|-------------------------------|--|
| SE Standard efficiency | EER up to 4,66 ESEER up to 5,75 |
| XE High efficiency | EER up to 5,12 ESEER up to 6,31 |
| ME Condenserless | EER up to 3,91 |
| SOUND LEVELS | |
| Standard sound | 75,2 ÷ 83,0 dB(A) |

STANDARD OPTIONS

- Wye Delta Starter (Y-Δ)
- Double setpoint
- Phase monitor
- Evaporator 1 pass
- Evaporator victaulic kit
- Evaporator Water side design pressure 10 bar
- Condenser Water side design pressure 16 bar
- Condenser 1 pass (Δ t 4-8°C) on SE ST
- Condenser 2 passes on XE ST
- Electronic expansion device
- High pressure side manometers
- Hour run meter
- General fault contactor
- Set-point reset, demand limit & alarm from external device

OPTIONS ON REQUEST

- Total heat recovery / Partial heat recovery
- Soft starter
- Heat pump version / Brine version
- Under / overvoltage control
- Energy meter
- Capacitors cosφ 0.9
- Current limit - display
- Condenser double flanges kit
- 20 mm evaporator insulation
- 20 mm condenser insulation
- Condenser victaulic kit
- Cu-ni 90-10 condenser tubes
- Condenser 2 passes (Δ t 9-15°C) on SE ST
- Condenser 4 passes on XE ST
- Water pressure differential switch on condenser
- Water pressure differential switch on evaporator
- Evaporator flow switch / Condenser flow switch
- Discharge line shut off valve
- Suction line shut off valve
- Container kit
- Rubber anti vibration mount
- Sound proof system
- Double pressure relief valve with diverter

WHS E

WATER COOLED CHILLER WITH SCREW COMPRESSORS

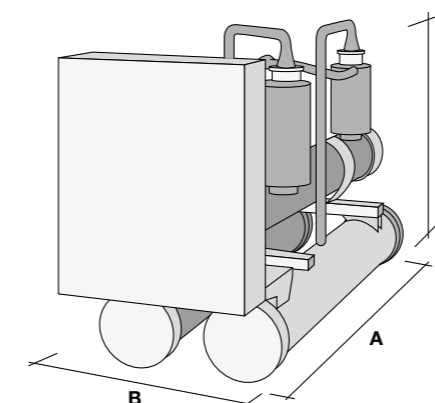
TECHNICAL DATA WHS E SE ST - cooling only

| WHS E SE ST | | 096.1 | 112.1 | 131.1 | 153.1 | 182.2 | 200.2 | 222.2 | 240.2 | 251.2 | 281.2 |
|-------------------------------|---------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling Capacity ¹ | kW | 333 | 394 | 460 | 538 | 640 | 705 | 782 | 844 | 910 | 986 |
| Unit power input ¹ | kW | 71,5 | 85,8 | 101 | 120 | 141 | 156 | 171 | 186 | 200 | 218 |
| EER | -- | 4,66 | 4,59 | 4,56 | 4,47 | 4,53 | 4,52 | 4,57 | 4,55 | 4,55 | 4,51 |
| ESEER | -- | 5,06 | 4,96 | 4,93 | 4,86 | 5,54 | 5,75 | 5,56 | 5,7 | 5,47 | 5,61 |
| Sound Pressure ² | dB(A) | 75,2 | 76,2 | 78,2 | 78,2 | 77,8 | 78,2 | 78,7 | 79,8 | 80,7 | 80,7 |
| Compressor | Type | Semi-hermetic single screw compressor | | | | | | | | | |
| Quantity | No. | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Minimum capacity | % | 25 | 25 | 25 | 25 | 12,5 | 12,5 | 12,5 | 12,5 | 12,5 | 12,5 |
| Refrigerant | Type | R-134a | | | | | | | | | |
| N. of circuits | No. | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Evaporator | Type | Single Pass Shell&Tube | | | | | | | | | |
| Quantity | No. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Water volume | l | 193 | 193 | 183 | 172 | 271 | 263 | 256 | 248 | 241 | 233 |
| Nominal Water pressure drop | kPa | 37 | 50 | 54 | 62 | 55 | 44 | 58 | 53 | 53 | 66 |
| Water connections size | mm | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 |
| Condenser | Type | Single Pass Shell&Tube | | | | | | | | | |
| Quantity | No. | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Water volume | l | 37 | 43 | 48 | 61 | 74 | 80 | 86 | 93 | 100 | 117 |
| Nominal Water pressure drop | kPa | 26 | 28 | 30 | 26 | 25 | 25 | 28 | 28 | 26 | 23 |
| Water connections size | " | 5" | 5" | 5" | 5" | 5" | 5" | 5" | 5" | 5" | 5" |
| Standard voltage | V/ph/Hz | 400V / 3ph / 50Hz | | | | | | | | | |

NOTES:

- (1) 12/7°C entering/leaving evaporator water temperature; 30/35°C entering/leaving condenser water temperature
- (2) At 1 m, according to ISO 3744, at free field semispherical conditions

| Weight and dimensions | | 096.1 | 112.1 | 131.1 | 153.1 | 182.2 | 200.2 | 222.2 | 240.2 | 251.2 | 281.2 |
|-----------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Shipping weight | kg | 2150 | 2160 | 2179 | 2224 | 3909 | 3927 | 3945 | 3971 | 3996 | 4080 |
| Operating weight | kg | 2380 | 2396 | 2410 | 2457 | 4217 | 4228 | 4243 | 4262 | 4288 | 4369 |
| (A) Length | mm | 3398 | 3398 | 3398 | 3398 | 4361 | 4361 | 4361 | 4361 | 4361 | 4361 |
| (B) Width | mm | 1430 | 1430 | 1430 | 1430 | 1350 | 1350 | 1350 | 1350 | 1350 | 1350 |
| (C) Height | mm | 1821 | 1821 | 1821 | 1821 | 2113 | 2113 | 2113 | 2113 | 2113 | 2113 |



TECHNICAL DATA WHS E SE ST - cooling only

| WHS E SE ST | | 292.2 | 329.3 | 342.3 | 362.3 | 383.3 | 398.3 | 414.3 | 429.3 |
|-------------------------------|---------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Cooling Capacity ¹ | kW | 1027 | 1155 | 1204 | 1274 | 1346 | 1401 | 1455 | 1510 |
| Unit power input ¹ | kW | 237 | 254 | 268 | 282 | 298 | 317 | 335 | 353 |
| EER | -- | 4,33 | 4,54 | 4,50 | 4,51 | 4,51 | 4,43 | 4,35 | 4,28 |
| ESEER | -- | 5,36 | 5,51 | 5,56 | 5,56 | 5,54 | 5,55 | 5,45 | 5,27 |
| Sound Pressure ² | dB(A) | 80,7 | 80,4 | 80,8 | 81,2 | 83 | 83 | 83 | 83 |
| Compressor | Type | Semi-hermetic single screw compressor | | | | | | | |
| Quantity | No. | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Minimum capacity | % | 12,5 | 8,3 | 8,3 | 8,3 | 8,3 | 8,3 | 8,3 | 8,3 |
| Refrigerant | Type | R-134a | | | | | | | |
| N. of circuits | No. | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Evaporator | Type | Single Pass Shell&Tube | | | | | | | |
| Quantity | No. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Water volume | l | 233 | 504 | 504 | 489 | 472 | 472 | 472 | 472 |
| Nominal Water pressure drop | kPa | 51 | 52 | 56 | 47 | 58 | 62 | 66 | 71 |
| Water connections size | mm | 168,3 | 219,1 | 219,1 | 219,1 | 219,1 | 219,1 | 219,1 | 219,1 |
| Condenser | Type | Single Pass Shell&Tube | | | | | | | |
| Quantity | No. | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Water volume | l | 122 | 135 | 143 | 151 | 159 | 167 | 174 | 183 |
| Nominal Water pressure drop | kPa | 24 | 24 | 24 | 25 | 24 | 24 | 24 | 23 |
| Water connections size | " | 5" | 5" | 5" | 5" | 5" | 5" | 5" | 5" |
| Standard voltage | V/ph/Hz | 400V / 3ph / 50Hz | | | | | | | |

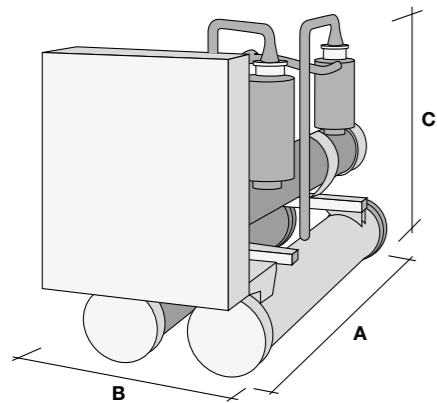
NOTES:

- (1) 12/7°C entering/leaving evaporator water temperature; 30/35°C entering/leaving condenser water temperature
 (2) At 1 m, according to ISO 3744, at free field semispherical conditions

NOTES:

- (1) 12/7°C entering/leaving evaporator water temperature; 30/35°C entering/leaving condenser water temperature
 (2) At 1 m, according to ISO 3744, at free field semispherical conditions

| Weight and dimensions | | 292.2 | 329.3 | 342.3 | 362.3 | 383.3 | 398.3 | 414.3 | 429.3 |
|-----------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|
| Shipping weight | kg | 4092 | 6079 | 6097 | 6136 | 6174 | 6192 | 6210 | 6228 |
| Operating weight | kg | 4386 | 6628 | 6646 | 6670 | 6699 | 6717 | 6735 | 6761 |
| (A) Length | mm | 4361 | 4426 | 4426 | 4426 | 4426 | 4426 | 4426 | 4426 |
| (B) Width | mm | 1350 | 2435 | 2435 | 2135 | 2135 | 2135 | 2135 | 2135 |
| (C) Height | mm | 2113 | 2323 | 2323 | 2323 | 2323 | 2323 | 2323 | 2323 |



WHS E

WATER COOLED CHILLER WITH SCREW COMPRESSORS

TECHNICAL DATA WHS E ME ST - cooling only

| WHS E ME ST | | 096.1 | 112.1 | 131.1 | 153.1 | 182.2 | 200.2 | 222.2 | 240.2 | 251.2 | 281.2 |
|----------------------------------|---------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling Capacity ¹ | kW | 328 | 391 | 428 | 504 | 596 | 657 | 730 | 788 | 850 | 919 |
| Unit power input ¹ | kW | 83,8 | 100 | 116 | 137 | 165 | 181 | 198 | 214 | 231 | 252 |
| EER | -- | 3,91 | 3,90 | 3,70 | 3,67 | 3,61 | 3,63 | 3,69 | 3,67 | 3,67 | 3,65 |
| Sound Pressure ² | dB(A) | 75,2 | 76,2 | 78,2 | 78,2 | 77,8 | 78,2 | 78,7 | 79,8 | 80,7 | 80,7 |
| Compressor | Type | Semi-hermetic single screw compressor | | | | | | | | | |
| Quantity | No. | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Minimum capacity | % | 25 | 25 | 25 | 25 | 12,5 | 12,5 | 12,5 | 12,5 | 12,5 | 12,5 |
| Refrigerant | Type | R-134a | | | | | | | | | |
| N. of circuits | No. | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Evaporator | Type | Single Pass Shell&Tube | | | | | | | | | |
| Quantity | No. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Water volume | l | 193 | 193 | 183 | 172 | 271 | 263 | 256 | 248 | 241 | 233 |
| Nominal Water pressure drop | kPa | 34 | 47 | 47 | 54 | 49 | 39 | 52 | 47 | 47 | 45 |
| Water connections size | mm | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 | 168,3 |
| Liquid connections Inlet | mm | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| Gas Discharge connections Outlet | mm | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 |
| Standard voltage | V/ph/Hz | 400V / 3ph / 50Hz | | | | | | | | | |

NOTES:

- (1) 12/7°C entering/leaving evaporator water temperature; 45°C saturated discharge temperature at the compressor
- (2) At 1m, according to ISO 3744, at free field semispherical conditions

WHS E

WATER COOLED CHILLER WITH SCREW COMPRESSORS

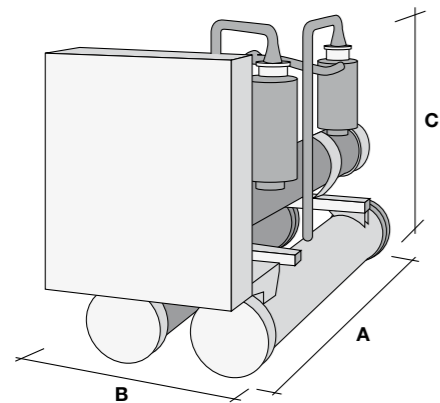
TECHNICAL DATA WHS E ME ST - cooling only

| WHS E ME ST | | 292.2 | 305.3 | 329.3 | 342.3 | 362.3 | 383.3 | 398.3 | 414.3 | 429.3 | |
|----------------------------------|---------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Cooling Capacity ¹ | kW | 966 | 1033 | 1078 | 1125 | 1188 | 1267 | 1319 | 1370 | 1422 | |
| Unit power input ¹ | kW | 271 | 279 | 296 | 312 | 329 | 347 | 366 | 386 | 405 | |
| EER | -- | 3,56 | 3,59 | 3,64 | 3,60 | 3,61 | 3,65 | 3,60 | 3,55 | 3,51 | |
| Sound Pressure ² | dB(A) | 80,7 | 80,4 | 80,8 | 81,2 | 83 | 80,4 | 80,8 | 81,2 | 83 | |
| Compressor | Type | Semi-hermetic single screw compressor | | | | | | | | | |
| Quantity | No. | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Minimum capacity | % | 12,5 | 8,3 | 8,3 | 8,3 | 8,3 | 8,3 | 8,3 | 8,3 | 8,3 | |
| Refrigerant | Type | R-134a | | | | | | | | | |
| N. of circuits | No. | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Evaporator | Type | Single Pass Shell&Tube | | | | | | | | | |
| Quantity | No. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| Water volume | l | 233 | 504 | 504 | 489 | 472 | 504 | 504 | 489 | 472 | |
| Nominal Water pressure drop | kPa | 45 | 52 | 46 | 49 | 41 | 51 | 55 | 59 | 63 | |
| Water connections size | mm | 168,3 | 219,1 | 219,1 | 219,1 | 219,1 | 219,1 | 219,1 | 219,1 | 219,1 | |
| Liquid connections Inlet | mm | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | |
| Gas Discharge connections Outlet | mm | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | 88,9 | |
| Standard voltage | V/ph/Hz | 400V / 3ph / 50Hz | | | | | | | | | |

NOTES:

- (1) 12/7°C entering/leaving evaporator water temperature; 45°C saturated discharge temperature at the compressor
- (2) At 1m, according to ISO 3744, at free field semispherical conditions

| Weight and dimensions | | 096.1 | 112.1 | 131.1 | 153.1 | 182.2 | 200.2 | 222.2 | 240.2 | 251.2 | 281.2 |
|-----------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Shipping weight | kg | 1861 | 1861 | 1869 | 1884 | 3331 | 3339 | 3347 | 3356 | 3364 | 3412 |
| Operating weight | kg | 2054 | 2054 | 2052 | 2056 | 3602 | 3602 | 3603 | 3604 | 3605 | 3645 |
| (A) Length | mm | 3114 | 3114 | 3114 | 3114 | 4391 | 4391 | 4391 | 4391 | 4391 | 4391 |
| (B) Width | mm | 1464 | 1464 | 1464 | 1464 | 1464 | 1464 | 1464 | 1464 | 1464 | 1464 |
| (C) Height | mm | 1899 | 1899 | 1899 | 1899 | 2325 | 2325 | 2325 | 2325 | 2325 | 2325 |



| Weight and dimensions | | 292.2 | 305.3 | 329.3 | 342.3 | 362.3 | 383.3 | 398.3 | 414.3 | 429.3 |
|-----------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Shipping weight | kg | 3412 | 5146 | 5167 | 5167 | 5188 | 5208 | 5208 | 5208 | 5208 |
| Operating weight | kg | 3645 | 5667 | 5671 | 5671 | 5677 | 5680 | 5680 | 5680 | 5680 |
| (A) Length | mm | 4391 | 4426 | 4426 | 4426 | 4426 | 4426 | 4426 | 4426 | 4426 |
| (B) Width | mm | 1464 | 2135 | 2135 | 2135 | 2135 | 2135 | 2135 | 2135 | 2135 |
| (C) Height | mm | 2325 | 2415 | 2415 | 2415 | 2415 | 2415 | 2415 | 2415 | 2415 |

