

# MBD HTD

## BRINE-WATER HEAT PUMPS FOR INDOOR INSTALLATION



### Options

#### Operating mode

R - Heating and cooling  
(reversible on refrigerant side)

H - Heating

#### Heat recovery

Base version

Desuperheater version

#### Acoustic setting up

B - Base setting up

S - Low noise setting up

#### Plant side flow rate management

None

Standard pump

Modulating pump

High head pump

#### Source side flow rate management

None

Standard pump

Modulating pump

High head pump

#### Compressor starter

Standard

Soft starter

#### Accessories

Vibration dampers

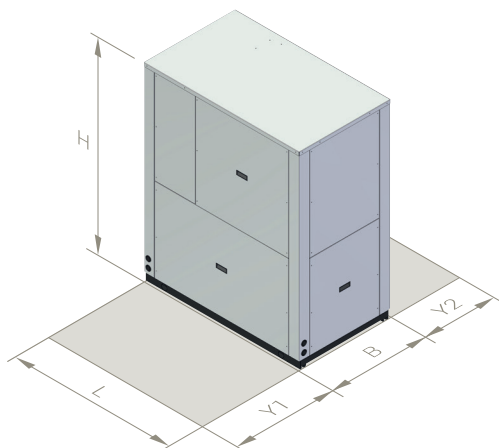
Remote interface

| TECHNICAL DATA   | 44  | 52   | 59   | 67   | 76   | 86   |    |
|--|---|------|------|------|------|------|----|
| Efficiency class - EU reg 811/2013<br>average climate - medium temperature application | A++   | A++  | A++  | A++  | A++  | A++  | -  |
| Power supply   | 400V - 3N - 50Hz                              |      |      |      |      |      | -  |
| Refrigerant  | R410A   |      |      |      |      |      | -  |
| Type of compressors  | high temperature scroll with liquid injection |      |      |      |      |      | -  |
| N° of compressors / N° of refrigerant circuits   | 2 / 1   |      |      |      |      |      | -  |
| Type of plant side heat exchangers   | stainless steel brazed plates                 |      |      |      |      |      | -  |
| Type of source side heat exchangers  | stainless steel brazed plates                 |      |      |      |      |      | -  |
| Hydraulic fittings   | 2" M  | 2" M | 2" M | 2" M | 2" M | 2" M | -  |
| Weight *   | 390   | 402  | 415  | 435  | 439  | 459  | kg |
| Maximum power input *  | 20,2  | 23,2 | 26,4 | 29,4 | 33,2 | 37,6 | kW |

\* base unit without options and accessories

| OPERATING RANGE                  | HEATING |      | COOLING |     |    |
|----------------------------------|---------|------|---------|-----|----|
|                                  | min     | max  | min     | max |    |
| Water outlet temperature         | 15      | 65 * | 6       | 25  | °C |
| Source inlet temperature (brine) | -15     | 25   | 5       | 50  | °C |

\* The maximum water outlet temperature can be increased up to 70°C keeping a  $\Delta T$  of 10°C between inlet and outlet



|    | 44   | 52   | 59   | 67   | 76   | 86   |    |
|----|------|------|------|------|------|------|----|
| L  | 1330 | 1330 | 1330 | 1330 | 1330 | 1330 | mm |
| B  | 780  | 780  | 780  | 780  | 780  | 780  | mm |
| H  | 1630 | 1630 | 1630 | 1630 | 1630 | 1630 | mm |
| Y1 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | mm |
| Y2 | 500  | 500  | 500  | 500  | 500  | 500  | mm |

| HEATING |                             | B | W  | 44          | 52          | 59          | 67          | 76          | 86          |     |
|---------|-----------------------------|---|----|-------------|-------------|-------------|-------------|-------------|-------------|-----|
| B0W35   | Heating capacity            | 0 | 35 | 44,5        | 52,0        | 59,3        | 67,5        | 76,7        | 86,4        | kW  |
|         | Power input                 |   |    | 10,0        | 11,6        | 13,3        | 15,0        | 17,1        | 19,3        | kW  |
|         | COP                         |   |    | <b>4,45</b> | <b>4,48</b> | <b>4,46</b> | <b>4,50</b> | <b>4,49</b> | <b>4,48</b> | -   |
|         | Plant side water flow rate  |   |    | 7672        | 8971        | 10235       | 11655       | 13248       | 14911       | l/h |
|         | Plant side pressure drops   |   |    | 18          | 17          | 15          | 14          | 18          | 17          | kPa |
|         | Source side water flow rate |   |    | 11071       | 12948       | 14762       | 16830       | 19120       | 21506       | l/h |
|         | Source side pressure drops  |   |    | 38          | 34          | 31          | 29          | 37          | 35          | kPa |
| B0W45   | Heating capacity            | 0 | 45 | 41,6        | 48,6        | 55,4        | 63,1        | 71,8        | 80,7        | kW  |
|         | Power input                 |   |    | 11,8        | 13,8        | 15,7        | 17,7        | 20,3        | 22,8        | kW  |
|         | COP                         |   |    | <b>3,53</b> | <b>3,52</b> | <b>3,53</b> | <b>3,56</b> | <b>3,54</b> | <b>3,54</b> | -   |
|         | Plant side water flow rate  |   |    | 7200        | 8419        | 9605        | 10938       | 12433       | 13993       | l/h |
|         | Plant side pressure drops   |   |    | 16          | 15          | 13          | 13          | 16          | 15          | kPa |
|         | Source side water flow rate |   |    | 9553        | 11174       | 12735       | 14525       | 16499       | 18553       | l/h |
|         | Source side pressure drops  |   |    | 29          | 26          | 24          | 22          | 28          | 27          | kPa |
| B0W55   | Heating capacity            | 0 | 55 | 39,2        | 45,9        | 52,3        | 59,6        | 67,7        | 76,2        | kW  |
|         | Power input                 |   |    | 13,3        | 15,5        | 17,7        | 20,0        | 22,8        | 25,7        | kW  |
|         | COP                         |   |    | <b>2,95</b> | <b>2,96</b> | <b>2,95</b> | <b>2,98</b> | <b>2,97</b> | <b>2,96</b> | -   |
|         | Plant side water flow rate  |   |    | 4269        | 4991        | 5695        | 6485        | 7371        | 8296        | l/h |
|         | Plant side pressure drops   |   |    | 6           | 6           | 5           | 5           | 6           | 6           | kPa |
|         | Source side water flow rate |   |    | 8321        | 9734        | 11090       | 12656       | 14372       | 16157       | l/h |
|         | Source side pressure drops  |   |    | 22          | 20          | 18          | 17          | 22          | 21          | kPa |
| B0W65   | Heating capacity            | 0 | 65 | 37,9        | 44,3        | 50,6        | 57,6        | 65,5        | 73,7        | kW  |
|         | Power input                 |   |    | 15,1        | 17,6        | 20,1        | 22,8        | 26,0        | 29,3        | kW  |
|         | COP                         |   |    | <b>2,51</b> | <b>2,52</b> | <b>2,52</b> | <b>2,53</b> | <b>2,52</b> | <b>2,52</b> | -   |
|         | Plant side water flow rate  |   |    | 3315        | 3876        | 4422        | 5036        | 5725        | 6443        | l/h |
|         | Plant side pressure drops   |   |    | 4           | 4           | 3           | 3           | 4           | 4           | kPa |
|         | Source side water flow rate |   |    | 7314        | 8557        | 9745        | 11128       | 12634       | 14198       | l/h |
|         | Source side pressure drops  |   |    | 17          | 16          | 15          | 14          | 17          | 17          | kPa |

| COOLING |                             | B  | W  | 44          | 52          | 59          | 67          | 76          | 86          |     |
|---------|-----------------------------|----|----|-------------|-------------|-------------|-------------|-------------|-------------|-----|
| B30W7   | Cooling capacity            | 30 | 7  | 45,4        | 53,2        | 60,7        | 69,1        | 78,5        | 88,4        | kW  |
|         | Power input                 |    |    | 9,89        | 11,5        | 13,1        | 14,8        | 16,9        | 19,0        | kW  |
|         | EER                         |    |    | <b>4,59</b> | <b>4,63</b> | <b>4,63</b> | <b>4,67</b> | <b>4,64</b> | <b>4,65</b> | -   |
|         | Plant side water flow rate  |    |    | 7826        | 9164        | 10451       | 11893       | 13523       | 15222       | l/h |
|         | Plant side pressure drops   |    |    | 19          | 17          | 16          | 15          | 19          | 18          | kPa |
|         | Source side water flow rate |    |    | 10344       | 12110       | 13821       | 15720       | 17864       | 20120       | l/h |
|         | Source side pressure drops  |    |    | 33          | 30          | 27          | 25          | 32          | 31          | kPa |
| B30W18  | Cooling capacity            | 30 | 18 | 59,3        | 69,5        | 79,3        | 90,3        | 103         | 116         | kW  |
|         | Power input                 |    |    | 10,0        | 11,6        | 13,2        | 14,9        | 17,0        | 19,1        | kW  |
|         | EER                         |    |    | <b>5,93</b> | <b>5,99</b> | <b>6,01</b> | <b>6,06</b> | <b>6,06</b> | <b>6,07</b> | -   |
|         | Plant side water flow rate  |    |    | 10283       | 12041       | 13733       | 15627       | 17769       | 20001       | l/h |
|         | Plant side pressure drops   |    |    | 31          | 28          | 26          | 24          | 31          | 29          | kPa |
|         | Source side water flow rate |    |    | 12950       | 15162       | 17301       | 19681       | 22367       | 25190       | l/h |
|         | Source side pressure drops  |    |    | 50          | 45          | 41          | 38          | 48          | 47          | kPa |

| ACOUSTIC PERFORMANCES |                             | W  | W  | 44        | 52        | 59        | 67        | 76        | 86        |       |
|-----------------------|-----------------------------|----|----|-----------|-----------|-----------|-----------|-----------|-----------|-------|
| Base                  | Sound power level           | 10 | 35 | <b>70</b> | <b>71</b> | <b>72</b> | <b>73</b> | <b>74</b> | <b>75</b> | dB(A) |
|                       | Sound pressure level - 1 m  |    |    | 54        | 55        | 56        | 57        | 58        | 59        | dB(A) |
|                       | Sound pressure level - 5 m  |    |    | 44        | 45        | 45        | 47        | 48        | 48        | dB(A) |
|                       | Sound pressure level - 10 m |    |    | 38        | 39        | 40        | 41        | 42        | 43        | dB(A) |
| Low noise             | Sound power level           | 10 | 35 | <b>64</b> | <b>65</b> | <b>66</b> | <b>67</b> | <b>68</b> | <b>69</b> | dB(A) |
|                       | Sound pressure level - 1 m  |    |    | 48        | 49        | 50        | 51        | 52        | 53        | dB(A) |
|                       | Sound pressure level - 5 m  |    |    | 38        | 39        | 40        | 41        | 42        | 43        | dB(A) |
|                       | Sound pressure level - 10 m |    |    | 33        | 34        | 34        | 35        | 36        | 37        | dB(A) |

Data declared according to EN 14511. Acoustic performances declared according to EN 12102. The data are related to reversible units (R) without options or accessories.

|        |            |                        |         |                        |
|--------|------------|------------------------|---------|------------------------|
| B0W35  | = source : | brine in 0°C out -3°C  | plant : | water in 30°C out 35°C |
| B0W45  | = source : | brine in 0°C out -3°C  | plant : | water in 40°C out 45°C |
| B0W55  | = source : | brine in 0°C out -3°C  | plant : | water in 47°C out 55°C |
| B0W65  | = source : | brine in 0°C out -3°C  | plant : | water in 55°C out 65°C |
| B30W7  | = source : | brine in 30°C out 35°C | plant : | water in 12°C out 7°C  |
| B30W18 | = source : | brine in 30°C out 35°C | plant : | water in 23°C out 18°C |