

## MDW

### R410A

Multisplit heat pumps with heat recovery for hot domestic water production  
Variable refrigerant flow system (VRF)  
with inverter power input from 10 to 16 kW



MDW



Wired panel for MDW HB



MDW HB



HBi WT / WTS

### Direct expansion indoor units



MDS WN



MDS F



MDS DH



Wired panel



Remote control



MDS C



MDS CS

### Features

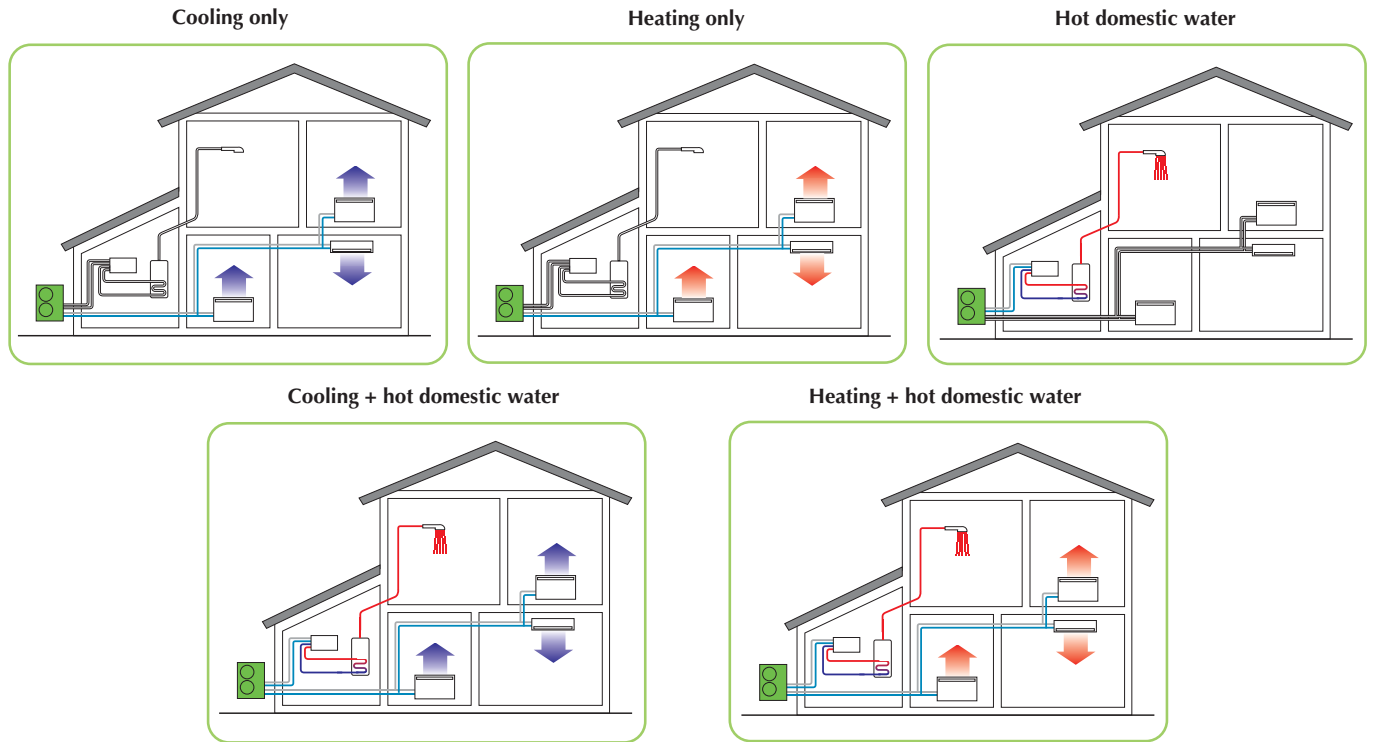
- 4 sizes of outdoor unit are available
- 2 indoor hydronic modules (MDS HB) are available for producing hot technical water, equipped with back-lit soft-touch wired panel
- The same direct expansion indoor units as for the MDS range are available: wall (MDS WN), Cassette (MDS CS / C), floor/ceiling (MDS F) and ducted horizontal installation (MDS DH)
- 4 sizes of domestic hot water accumulation tank (200, 300, 350 or 400 litres) are available, with main coil, electric resistor, and a supplementary coil if required
- 2 - 7 direct expansion indoor units can be connected to the outdoor unit
- Refrigerant gas R410A
- Wired panel as standard on all indoor units
- Infrared remote control as standard on all direct expansion indoor units
- Outdoor unit equipped with two fans with DC inverter motor with continuous speed variation
- DC inverter compressors purposely selected to maximise efficiency, reduce consumption and minimise pickup current input
- Microprocessor control
- The chiller connections to the direct expansion indoor units on the MDW systems are made using braze welded Y-branches, ensuring maximum installation flexibility
- Anti-legionella pneumophilia cycle: this function can be set via the wired panel of the hydronic module
- Particularly quiet operation
- Easily removable and washable air filter
- Length of the refrigerant lines up to 150m
- Outdoor units with four flare-type cooling connections: two for the hydronic module and two for the lines of the direct expansion indoor units
- Self-Restart function: active by default, but can be deactivated if necessary
- Anti-freeze function for hydronic module and hot domestic water accumulation tank
- **Condensation control device as standard: allows cooling operation with outdoor temperatures down to -5°C**

### Accessories

- **RNY01** or **RNY11**: Y-branch. The accessory is composed of two Y-branches, one for the liquid line and one for the discharge line. Mandatory accessory
- **MDW HB**: hydronic module for the production of hot water. Internal installation with 5kW or 8kW power. Mandatory accessory
- **HBi WT**: hot domestic water accumulation tank of 200, 300, 350 or 400 litres, with main coil and electric resistor giving 3kW support. Internal installation. **Mandatory accessory (as an alternative to HBi WTS)**
- **MDSGL40S**: air delivery and recovery grille for internal Cassette-type units. Mandatory accessory for MDS CS
- **MDSGL40**: air delivery and recovery grille for internal Cassette-type units. Mandatory accessory for MDS C
- **ECD**: remote contact kit. Allows the direct expansion indoor units to be switched on/off via an external contact
- **MDSCC**: centralised command for handling up to 64 communication modules (MDSCM accessory), for a maximum of 64 outdoor units
- **MDSCM**: communication module
- **MDSRC**: simplified control panel for centralised command. Allows the direct expansion indoor units to be controlled either individually or in groups
- **MDSR**: signal repeater. Necessary if the communication cables are more than 1000 metres long

	Compatibility					
	MDW50HB	MDW80HB	HBi200WT/WTS	HBi300WT/WTS	HBi350WT/WTS	HBi400WT/WTS
MDW100	✓		✓	✓		
MDW120	✓		✓	✓		
MDW140		✓		✓	✓	✓
MDW160		✓		✓	✓	✓

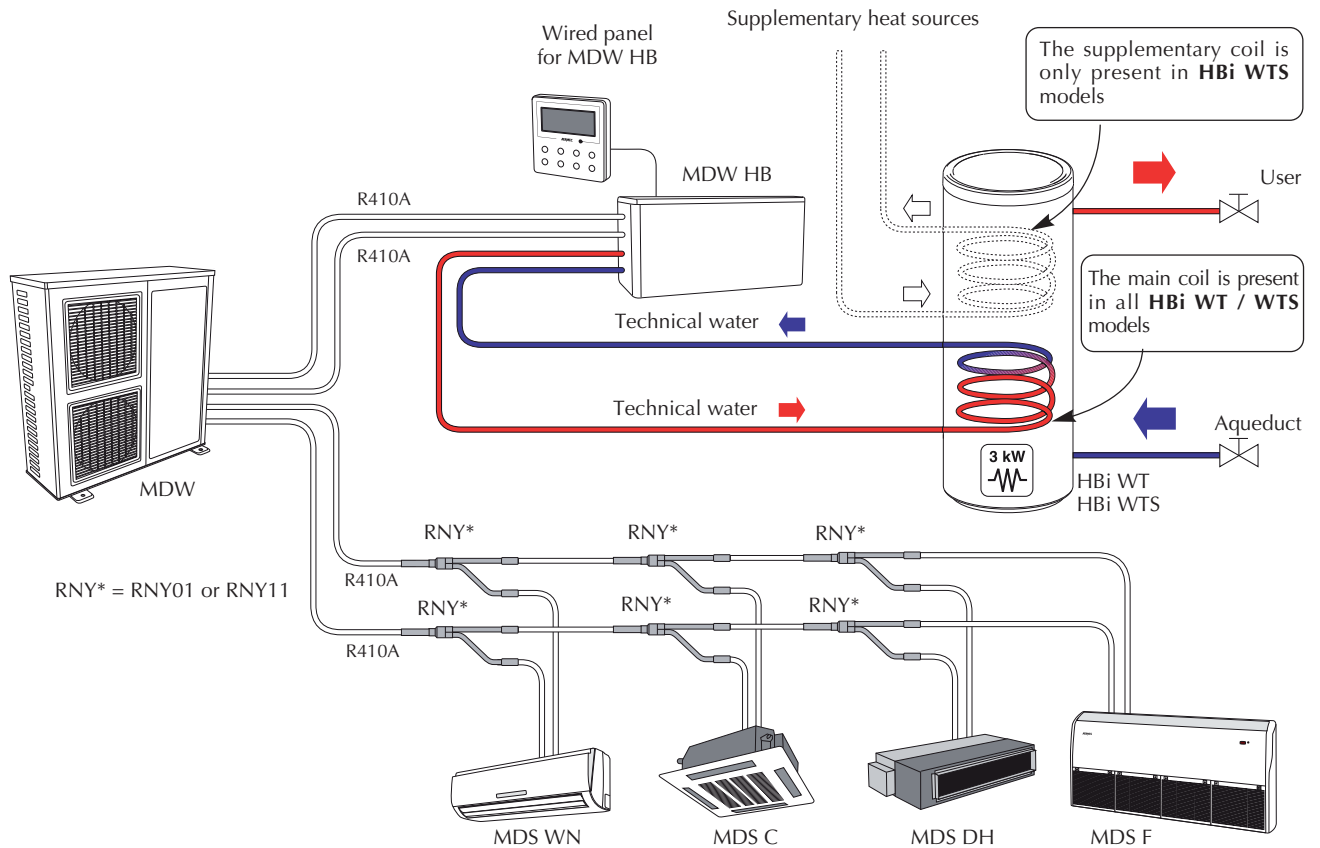
## Operating mode



- |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Cooling only:</b></p> <ul style="list-style-type: none"> <li>- outside air temp. from -5°C D.B. to 48°C D.B.</li> </ul> <p><b>Cooling + hot domestic water:</b></p> <ul style="list-style-type: none"> <li>- outside air temp. from -5°C D.B. to 43°C D.B.</li> <li>- accumulation water temp. from 35°C to 58°C*</li> </ul> | <p><b>Heating only:</b></p> <ul style="list-style-type: none"> <li>- outside air temp. from -20°C D.B. to 24°C D.B.</li> </ul> <p><b>Heating + hot domestic water:</b></p> <ul style="list-style-type: none"> <li>- outside air temp. from -15°C D.B. to 24°C D.B.</li> <li>- accumulation water temp. from 35°C to 58°C*</li> </ul> | <p><b>Hot domestic water only:</b></p> <ul style="list-style-type: none"> <li>- outside air temp. from -15°C D.B. to 43°C D.B.</li> <li>- accumulation water temp. from 35°C to 58°C*</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

\* The maximum temperature that can be set from the wired panel (MDW HB) is 58°C. It is, however, possible - via a combination of keys - to modify the upper limit, bringing it from 58°C (default) to 65°C

## Example of connection



## Technical data of direct expansion indoor unit

Internal units	MDS	22WN	28WN	36WN	45WN	50WN	56WN
Cooling capacity	W	2200	2800	3600	4500	5000	5600
Heating capacity	W	2500	3200	4000	5000	5800	6300
Air flow	m <sup>3</sup> /h	360	360	500	500	700	750
Moisture removed	l/h	1	1	1.2	1.2	2	2
Total power input	W	32	32	48	48	56	58
♪ Sound pressure (min)	dB (A)	28	28	32	32	38	40
♪ Sound pressure (max)	dB (A)	31	31	35	35	42	45
Cooling connections	Ø liquid	6.35(1/4")	6.35(1/4")	6.35(1/4")	6.35(1/4")	6.35(1/4")	9.52(3/8")
	Ø gas	9.52(3/8")	9.52(3/8")	12.7(1/2")	12.7(1/2")	12.7(1/2")	15.9(5/8")
	Type	flare	flare	flare	flare	flare	flare

Internal units	MDS	28CS	36CS	45CS
Cooling capacity	W	2800	3600	4500
Heating capacity	W	3200	4000	5000
Air flow	m <sup>3</sup> /h	600	600	600
Moisture removed	l/h	0.8	0.8	1.2
Total power input	W	12	12	12
♪ Sound pressure (max)	dB (A)	47	47	47
Cooling connections	Ø liquid	6.35(1/4")	6.35(1/4")	6.35(1/4")
	Ø gas	9.52(3/8")	12.7(1/2")	12.7(1/2")
	Type	flare	flare	flare

Internal unit	MDS	28C	36C	45C	50C	56C	71C	90C	112C
Cooling capacity	W	2800	3600	4500	5000	5600	7100	9000	11200
Heating capacity	W	3200	4000	5000	5500	6300	8000	10000	12500
Air flow	m <sup>3</sup> /h	680	680	680	680	1180	1180	1860	1860
Moisture removed	l/h	0.8	0.8	1.2	1.2	1.9	1.9	2.7	2.7
Total power input	W	60	60	65	65	83	83	133	133
♪ Sound pressure (min)	dB (A)	34	34	34	34	35	35	36	36
♪ Sound pressure (max)	dB (A)	37	37	37	37	39	39	40	40
Cooling connections	Ø liquid	6.35(1/4")	6.35(1/4")	6.35(1/4")	6.35(1/4")	9.52(3/8")	9.52(3/8")	9.52(3/8")	9.52(3/8")
	Ø gas	9.52(3/8")	12.7(1/2")	12.7(1/2")	12.7(1/2")	15.9(5/8")	15.9(5/8")	15.9(5/8")	15.9(5/8")
	Type	flare	flare	flare	flare	flare	flare	flare	flare

Internal unit	MDS	28F	36F	50F	71F	112F
Cooling capacity	W	2800	3600	5000	7100	11200
Heating capacity	W	3200	4000	5800	8000	12500
Air flow	m <sup>3</sup> /h	550	600	700	1170	2200
Total power input	W	19	19	75	185	280
♪ Sound pressure (max)	dB (A)	37	38	47	50	53
Cooling connections	Ø liquid	6.35(1/4")	6.35(1/4")	6.35(1/4")	9.52(3/8")	9.52(3/8")
	Ø gas	9.52(3/8")	12.7(1/2")	12.7(1/2")	15.9(5/8")	15.9(5/8")
	Type	flare	flare	flare	flare	flare

Internal units	MDS	22DH	28DH	36DH	45DH	56DH
Cooling capacity	W	2200	2800	3600	4500	5600
Heating capacity	W	2500	3200	4000	5000	6300
Air flow	m <sup>3</sup> /h	450	570	570	700	1000
Moisture removed	l/h	0.7	0.9	0.9	1.3	2.1
Total power input	W	85	90	90	150	240
♪ Sound pressure	dB (A)	37	39	39	40	44
Cooling connections	Ø liquid	6.35(1/4")	6.35(1/4")	6.35(1/4")	6.35(1/4")	9.52(3/8")
	Ø gas	9.52(3/8")	9.52(3/8")	12.7(1/2")	12.7(1/2")	15.9(5/8")
	Type	flare	flare	flare	flare	flare

Indoor units	MDS	71DH	90DH	112DH	140DH
Cooling capacity	W	7100	9000	11200	14000
Heating capacity	W	8000	10000	12500	14500
Air flow	m <sup>3</sup> /h	1100	1700	1700	2000
Moisture removed	l/h	2.1	3	3	3
Total power input	W	240	360	360	500
♪ Sound pressure	dB (A)	45	48	48	50
Cooling connections	Ø liquid	9.52(3/8")	9.52(3/8")	9.52(3/8")	9.52(3/8")
	Ø gas	15.9(5/8")	15.9(5/8")	15.9(5/8")	15.9(5/8")
	Type	flare	flare	flare	flare

Indoor unit power supply: 230V~50Hz

Performance values refer to the following conditions:

♪ measured at 1m in semi-anechoic chamber

■ Cooling:

- room air temperature 27°C D.B. 19°C W.B.
- outside air temperature 35°C D.B.

♪ measured at 1.4m in semi-anechoic chamber

■ Heating:

- room air temperature 20°C D.B.
- outside air temperature 7°C D.B. 6°C W.B.

## Technical data for hot domestic water accumulation tank

Hot domestic water accumulation tank	HBi	200WT	200WTS	300WT	300WTS	350WT	350WTS	400WT	400WTS
Capacity	l	200	200	300	300	350	350	400	400
Electric resistor power	kW	3	3	3	3	3	3	3	3
Electric resistor input current	A	13	13	13	13	13	13	13	13
Power supply		230V ~ 50Hz							
User water connections (In / Out)	Ø	G1/2	G1/2	G1/2	G1/2	G1/2	G1/2	G1/2	G1/2
Main coil water connections (In / Out)	Ø	G3/4	G3/4	G3/4	G3/4	G3/4	G3/4	G3/4	G3/4
Supplementary coil water connections (In / Out)	Ø	-	G3/4	-	G3/4	-	G3/4	-	G3/4
Supplementary coil	L	m	10	10	10	10	10	10	10
	Ø x s	mm	-	22 x 0.8	-	22 x 0.8	-	22 x 0.8	-

## Technical data of the external units and hydronic modules

Outdoor units	MDW	100	120	140	160
Cooling capacity (nominal)	kW	10	12	14	16
Input power (nominal)	kW	4.5	5.0	5.5	5.9
Heating capacity (nominal)	kW	11	14	15.4	17.6
Input power (nominal)	kW	3.8	4.2	4.9	5.3
Max input power	kW	5.7	6.2	6.5	6.8
Total connectable power (min/max)	kW	8/13	8/13	8/16	8/16
Connectable direct expansion indoor units (min/max)	no.	2/6	2/6	2/7	2/7
Twin Rotary compressors	no.x Type	1 x DC Inverter	1 x DC Inverter	1 x DC Inverter	1 x DC Inverter
Fans	no.x Type	2 x DC Inverter	2 x DC Inverter	2 x DC Inverter	2 x DC Inverter
♪ Sound pressure (max)	dB (A)	56	56	58	60
Refrigerant charge	kg	5	5	7	7
Length of cooling lines (max)	m	150	150	150	150
Level difference of indoor unit / indoor unit (max)	m	10	10	10	10
Level difference of outdoor unit / indoor unit (max)	U. Outdoor unit higherm	25	25	25	25
	U. Outdoor unit lower	20	20	20	20
Cooling connections (towards indoor units)	Ø liquid	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")
	Ø gas	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")	19.05 (3/4")
	Type flare flare flare				
Cooling connections (towards MDW_HB)	Ø liquid	12.7 (1/2")	12.7 (1/2")	12.7 (1/2")	12.7 (1/2")
	Ø gas	15.9 (5/8")	15.9 (5/8")	15.9 (5/8")	15.9 (5/8")
	Type flare flare flare				
Power supply		230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz

♪ measured at 1m at the front in semi-anechoic chamber

■ Cooling only:

- room air temperature 27°C D.B. 19°C W.B.
- outside air temperature 35°C D.B.

■ Heating only:

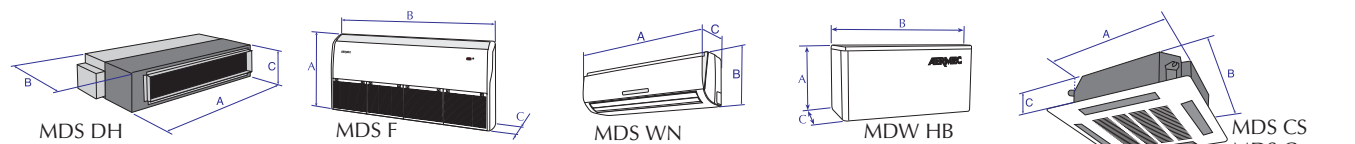
- room air temperature 20°C D.B.
- outside air temperature 7°C D.B. 6°C W.B.

Hot domestic water hydronic module	MDW	50HB	80HB
Heating capacity (nominal)*	kW	5	8
Technical water circulator	Capacity	l/min	16.7
	Head (max)	m	6
Total power input	W	80	80
Length of cooling lines (max)	m	10	10
Level difference of outdoor unit / hydronic module	m	5	5
Cooling connections towards outdoor unit	Ø liquid	12.7 (1/2")	12.7 (1/2")
	Ø gas	15.9 (5/8")	15.9 (5/8")
	Type flare flare		
Water connections (In / Out)	Ø	G3/4	G3/4
Length of hydraulic lines Hydronic module / Tank (max)	m	5	5
Power supply		230V ~ 50Hz	230V ~ 50Hz

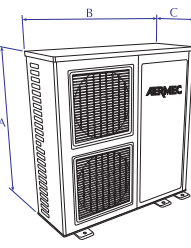
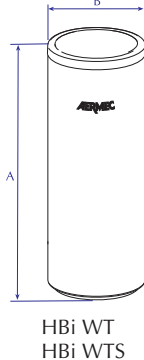
■ (\*) Hot domestic water only:

- outside air temperature 20°C D.B. 15°C W.B.
- initial / final temperature of water in the accumulation tank 15°C / 55°C

## Dimensions (mm)



	A	B	C	Weight		A	B	C	Weight
	mm	mm	mm	kg		mm	mm	mm	kg
MDS DH					MDS WN				
MDS F					MDW HB				
MDS22WN	770	250	190	8	MDS50F	695	840	238	26
MDS28WN	770	250	190	8	MDS71F	600	1300	188	32
MDS36WN	830	285	189	11	MDS112F	695	1590	238	42
MDS45WN	830	285	189	11	MDS22DH	880	665	250	29
MDS50WN	1020	310	228	12	MDS28DH	880	665	250	31
MDS56WN	1020	310	228	12	MDS36DH	880	665	250	31
MDS28CS*	570	570	230	20	MDS45DH	980	721	266	36
MDS36CS*	570	570	230	20	MDS56DH	1155	756	300	51
MDS45CS*	570	570	230	20	MDS71DH	1155	756	300	51
MDS28C**	840	840	190	25	MDS90DH	1425	756	300	64
MDS36C**	840	840	190	25	MDS112DH	1425	756	300	64
MDS45C**	840	840	190	25	MDS140DH	1425	756	300	66
MDS50C**	840	840	190	25	MDW100	1250	950	340	105
MDS56C**	840	840	240	30	MDW120	1250	950	340	105
MDS71C**	840	840	240	30	MDW140	1250	950	340	115
MDS90C**	840	840	320	38	MDW160	1250	950	340	115
MDS112C**	840	840	320	38	MDW50HB	250	650	300	25
MDS28F	695	840	238	26	MDW80HB	250	650	300	25
MDS36F	695	840	238	26	HBi200WT / WTS	1595	540	/	68/71
					HBi300WT / WTS	1620	620	/	82/87
					HBi350WT / WTS	1895	620	/	96/100
					HBi400WT / WTS	2125	620	/	106/110

\*: Grille dimensions MDSGL405 mm 650x650x50, Weight = 5kg

\*\* : Grille dimensions MDSGL40 mm 950x950x60, Weight = 6.5kg

The technical data in this document are not binding. Aermec S.p.A. shall have the right to introduce at any time whatever modifications deemed necessary for the improvement of the product.

Aermec S.p.A.

Via Roma. 996 - 37040 Bevilacqua (VR) - Italy  
Telephone 0442633111 - Telefax 044293730  
www.aermec.com