Explosion Proof
Ex-M Power Inverter Series
Split Unit Air Conditioners

Ex MACHINERY
Equipment for Hazardous Areas

Key Benefits

- Specially designed for 24/7 optimal cooling and heating duty
- ATEX zone 2 and 22 version of indoor and/or outdoor unit.
- Operation range from +46°C down to -15°C ambient temperature
- Wall mount, Cassette or Ceiling suspended indoor models
- From 3.5kW up to 25kW
- 5 years warranty included on parts

Ex II 3G Ex h ic nAC IIB(+H2) T4 Gc (indoor unit)
Ex II 3G Ex h nAC IIB(+H2) T3 Gc (outdoor unit)

Applications

Best explosion proof climate control solution when stored goods or devices must kept at a certain temperature (range) at all times. For (offshore) storage containers, battery housings, paint storages, analyzer rooms, warehouses containing dangerous goods or production facilities for goods that can cause explosions. Specific design enables defrosting and cooling at the same time. Suitable for the European climate.

24/7 Duty AC model for safe operations in hazardous areas

OEM Mitsubishi Electric Mr. Slim series. Specially designed for 24/7 continuous use in Western European Climate. Converted and certified to explosion proof ATEX zone 2 (3G) and 22 (3D) by Ex-Machinery Explosion Proof Equipment B. V.

Unique Options

- **3 Configurations:**
1. Indoor unit for ATEX zone 2, with outdoor unit for safe area
2. Indoor unit for safe area, with outdoor unit for ATEX zone
3. Both the indoor and outdoor units for ATEX zone 2
- **Marine Upgrade**: corrosion protection coating on fins, coils and/or outdoor casing. AISI 316 fasteners
- **R410a Retrofit:** R32 refrigerant replaced with R410a, including re-labeling
- **50Hz/60Hz upgrade,** including re-labeling
- **Connection to BMS or Industrial DCS**

Explosion Safety Specifications (ATEX)

EU Directive	2014/34/EU (ATEX114)
ATEX marking gas (indoor unit)	II 3G Ex h ic nAC IIB (+H2) T4 Gc
ATEX marking gas (outdoor unit)	II 3G Ex h nAC IIB (+H2) T3 Gc
ATEX marking dust (indoor unit)	II 3D Ex tc h IIIB T140°C Dc
ATEX marking dust (outdoor unit)	II 3D Ex tc h IIIB T150°C Dc
Applied standards	EN 60079-0, EN 60079-11, EN 60079-15, EN 60079-31, EN 60079-36, EN 80079-37

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SUPERIOR AIR CONDITIONING FOR CHALLENGING ENVIRONMENTS

- Battery rooms
- Operator shelters
- Production facilities
- Storage facilities
- Refineries
- Chemical plants
- Offshore platforms
- Control rooms
- Pharmaceutical facilities
- Paint and coating shops
- Fuel storage areas
- Gas compressor stations
- Petrochemical plants
- Food and beverage facilities

CONFIGURATIONS TAILORED TO YOUR UNIQUE NEEDS

1. Both indoor and outdoor unit for zone 2

2. Indoor unit for safe area, outdoor unit for zone 2

3. Indoor unit for zone 2, outdoor unit for safe area

OPTIONAL SPARE PARTS

- Indoor/Outdoor PCB's
- Fan Motors
- Compressor
- Remote control

Gido van Tienhoven – Founder & Technical Director

ABOUT EX-MACHINERY

Ex-Machinery delivers the best explosion proof HVAC systems, tailored to meet your needs in hazardous areas. With 20 years of ATEX expertise, we combine exceptional quality, customer-focused service, and reliable solutions to ensure safety in gas and dust-prone zones. Founded by Gido van Tienhoven, a passionate engineer and entrepreneur dedicated to preventing explosion hazards, our team is committed to providing expert advice and fast, efficient service. Contact us today for the best ATEX HVAC solutions and get your quotation within 24 hours.

WORLDWIDE SHIPMENT

WE PROVIDE THE BEST ATEX COOLING SOLUTIONS, COMBINING AFFORDABILITY, RELIABILITY, AND CUSTOMIZED CONFIGURATIONS WITH EXCEPTIONAL AFTERCARE AND SERVICE TO 50+ COUNTRIES

CONTACT US TODAY AT info@ex-machinery.nl

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Indoor units: Wall Mounted

Available wall mounted units

Non-ATEX/Standard	PI35W	PI50W	PI60W	PI71W	PI100W
ATEX Zone 2	Ex-M PI35W	Ex-M PI50W	Ex-M PI60W	Ex-M PI71W	Ex-M PI100W
Compatible Outdoor Unit	(Ex-M) PI35O	(Ex-M) PI50O	(Ex-M) PI60O	(Ex-M) PI71O	(Ex-M) PI100O
Set	Ex-M PI35	Ex-M PI50	Ex-M PI60	Ex-M PI71	Ex-M PI100

Wall mounted unit dimensions

HxWxD (mm)	299x898x237	365x1170x295
Unit weight (kg)	13.0	21

Technical specifications

Performance					
Cooling Capacity (Nom.) kW	3.6	4.6	6.1	7.1	9.5
Heating Capacity (Nom.) kW	4.1	5.0	7.0	8.0	11.2
Space cooling					
Min. cooling capacity (kW)	1.6	2.3	2.7	3.3	4.9
Max. cooling capacity (kW)	4.5	5.6	6.7	8.1	11.4
EER	4.2	3.71	3.91	3.81	3.9
SEER	6.5	6.6	6.8	6.8	6.4
Annual energy consumption (kWh/a)	194	244	314	365	519
Energy efficiency class	A++				
Space heating					
Min. cooling capacity (kW)	1.6	2.5	2.8	3.5	2.7
Max. cooling capacity (kW)	5.2	7.0	8.2	10.2	14.0
COP	3.94	3.72	4.04	3.78	3.61
SCOP	4.0	4.3	4.2	4.3	4.4
Annual energy consumption (kWh/a)	829	1074	1456	1530	2481
Energy efficiency class	A+				
Refrigerant	R-32 (R410a optional)				
Power supply	1~/220-240V/50Hz (60Hz on request) - powered by the outdoor unit				
Air Filter	Removable/Washable				
Air Flow Rate					
Cooling (L/M/H) (m^3/min)	7 .5 / 8.2 / 9.2 / 10.9	7 .5 / 8.2 / 9.2 / 10.9	18 / 20 / 22	18 / 20 / 22	20 / 23 / 26
Heating (L/M/H) (m^3/min)	7 .5 / 8.2 / 9.2 / 10.9	7 .5 / 8.2 / 9.2 / 10.9	16 / 17 / 18	18 / 20 / 22	20 / 23 / 26
Sound Level (PWL)					
Cooling dB(A)	60		64		65
Sound Level (SPL)					
Sound level (L/M/H) dB(A)	34 / 37 / 40 / 43		39 / 42 / 45		41 / 45 / 49
Piping connections					
Liquid Pipe (Flare Connection) OD (mm)	6.35		9.52		
Gas Pipe (Flare Connection) OD (mm)	12.7		15.88		
Max. Length (m)	50		55		100
Max Height (m)	30		30		30

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Indoor units: Ceiling Suspended

Available ceiling suspended units

Non-ATEX/Standard	PI35S	PI50S	PI60S	PI71S	PI100S	PI125S	PI140S
ATEX Zone 2	Ex-M PI35S	Ex-M PI50S	Ex-M PI60S	Ex-M PI71S	Ex-M PI100S	Ex-M PI125S	Ex-M PI140S
Compatible Outdoor Unit	(Ex-M) PI35O	(Ex-M) PI50O	(Ex-M) PI60O	(Ex-M) PI71O	(Ex-M) PI100O	(Ex-M) PI125O	(Ex-M) PI140O
Set	Ex-M PI35	Ex-M PI50	Ex-M PI60	Ex-M PI71	Ex-M PI100	Ex-M PI125	Ex-M PI140

Ceiling suspended unit dimensions

HxWxD (mm)	230x960x680		230x1280x680		230x1600x680		
Unit Weight (kg)	25	26	32	37	38	40	

Technical specifications

Performance							
Cooling Capacity (Nom.) kW	3.6	5.0	6.1	7.1	9.5	12.5	13.4
Heating Capacity (Nom.) kW	4.1	5.5	7.0	8.0	11.2	14.0	16.0
Space cooling							
Min. cooling capacity (kW)	1.6	2.3	2.7	3.3	4.9	5.1	5.4
Max. cooling capacity (kW)	4.5	5.6	6.7	8.1	11.4	14.0	15.0
EER	4.34	4.00	4.01	3.88	4.00	3.30	3.40
SEER	6.4	6.7	6.5	6.7	6.2	-	-
Annual energy consumption (kWh/a)	197	260	328	371	528	-	-
Energy efficiency class	A++					-	-
Space heating							
Min. cooling capacity (kW)	1.6	2.5	2.8	3.5	2.7	3.2	3.7
Max. cooling capacity (kW)	5.2	6.6	8.2	10.2	14.0	16.0	18.0
COP	4.02	4.04	4.01	3.71	3.60	3.30	3.40
SCOP	4.0	4.2	4.1	4.2	4.3	-	-
Annual energy consumption (kWh/a)	936	1266	1501	1567	2523	-	-
Energy efficiency class	A+					-	-
Refrigerant	R-32 (R410a optional)						
Power Supply	1~/220-240V/50Hz (60Hz on request) - powered by the outdoor unit						
Air Filter	Removable/Washable						
Air Flow Rate							
Cooling (L/M1/ M2/H) (m^3/min)	10 / 11 / 12 / 14	10 / 11 / 13 / 15	15 / 16 / 17 / 19	16 / 17 / 18 / 20	22 / 24 / 26 / 28	23 / 25 / 27 / 29	24 / 26 / 29 / 32
Heating (L/M1/ M2/H) (m^3/min)	10 / 11 / 12 / 13	10 / 11 / 13 / 16	15 / 16 / 17 / 19	16 / 17 / 18 / 20	22 / 24 / 26 / 28	23 / 25 / 27 / 29	24 / 26 / 29 / 32
Sound Level (PWL)							
Cooling dB(A)	60			62	63	65	68
Sound Level (SPL)							
Sound level (L/M1/ M2/ H) dB(A)	31 / 33 / 36 / 39	32 / 34 / 37 / 43	33 / 35 / 37 / 40	35 / 37 / 39 / 41	37 / 39 / 41 / 43	39 / 41 / 43 / 45	41 / 43 / 45 / 48
Piping connections							
Liquid Pipe (Flare Connection) OD (mm)	6.35		9.52				
Gas Pipe (Flare Connection) OD (mm)	12.7		15.88				
Max. Length (m)	50		55		100		
Max Height (m)	30						

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Indoor units: Cassette

Available cassette units

Non-ATEX/Standard	PI35C	PI50C	PI60C	PI71C	PI100C	PI125C	PI140C
ATEX Zone 2	Ex-M PI35C	Ex-M PI50C	Ex-M PI60C	Ex-M PI71C	Ex-M PI100C	Ex-M PI125C	Ex-M PI140C
Compatible Outdoor Unit	(Ex-M) PI35O	(Ex-M) PI50O	(Ex-M) PI60O	(Ex-M) PI71O	(Ex-M) PI100O	(Ex-M) PI125O	(Ex-M) PI140O
Set	Ex-M PI35	Ex-M PI50	Ex-M PI60	Ex-M PI71	Ex-M PI100	Ex-M PI125	Ex-M PI140

Cassette unit dimensions

HxWxD unit (mm)	258x840x840			298x840x840			
Including Panel (mm)	298x950x950			338x950x950			
Unit Weight (kg)	21			24	26		
Including Panel (kg)	26			29	31		

Technical specifications

Performance							
Cooling Capacity (Nom.) kW	3.6	5.0	6.1	7.1	9.5	12.5	13.4
Heating Capacity (Nom.) kW	4.1	6.0	7.0	8.0	11.2	14.0	16.0
Space cooling							
Min. cooling capacity (kW)	1.6	2.3	2.7	3.3	4.9	5.1	5.4
Max. cooling capacity (kW)	4.5	5.6	6.5	8.1	11.4	14.0	15.0
EER	5.10	4.52	4.20	4.30	4.40	3.60	3.70
SEER	7.5	7.6	7.2	7.6	7.6	-	-
Annual energy consumption (kWh/a)	168	230	296	327	436	-	-
Energy efficiency class	A++					-	-
Space heating							
Min. cooling capacity (kW)	1.6	2.5	2.8	3.5	2.7	3.2	3.7
Max. cooling capacity (kW)	5.2	7.3	8.2	10.2	14.0	16.0	18.0
COP	5.00	4.40	4.10	4.40	4.20	3.60	3.50
SCOP	4.7	4.9	4.6	4.8	4.8	-	-
Annual energy consumption (kWh/a)	804	1086	1339	1544	2523	-	-
Energy efficiency class	A++					-	-
Refrigerant	R-32 (R410a optional)						
Power Supply	1~/220-240V/50Hz (60Hz on request) - powered by the outdoor unit						
Air Filter	Removable/Washable						
Air Flow Rate							
Cooling (L/M1/ M2/H) (m^3/min)	11 / 13 / 15 / 16	12 / 14 / 16 / 18	12 / 14 / 16 / 18	17 / 19 / 21 / 23	19 / 22 / 25 / 28	21 / 24 / 26 / 29	24 / 26 / 29 / 32
Heating (L/M1/ M2/H) (m^3/min)	10 / 11 / 12 / 13	12 / 14 / 16 / 18	12 / 14 / 16 / 18	17 / 19 / 21 / 23	19 / 22 / 25 / 28	21 / 24 / 26 / 29	24 / 26 / 29 / 32
Sound Level (PWL)							
Cooling dB(A)	51	54		57	61	62	65
Sound Level (SPL)							
Sound level (L/M1/ M2/H) dB(A)	26 / 28 / 29 / 31	27 / 29 / 31 / 32	27 / 29 / 31 / 32	28 / 30 / 33 / 36	31 / 34 / 37 / 40	33 / 36 / 39 / 41	36 / 39 / 42 / 44
Piping connections							
Liquid Pipe (Flare Connection) OD (mm)	6.35		9.52				
Gas Pipe (Flare Connection) OD (mm)	12.7		15.88				
Max. Length (m)	50		55		100		
Max Height (m)	30						

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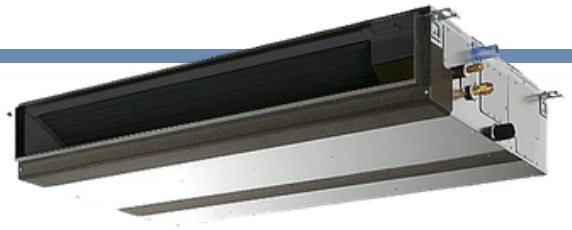

Indoor units: Ducted

Available ducted units

Non-ATEX/Standard	PI35D	PI50D	PI60D	PI71D	PI100D	PI125D	PI140D	PI200D	PI250D
ATEX Zone 2	Ex-M PI35D	Ex-M PI50D	Ex-M PI60D	Ex-M PI71D	Ex-M PI100D	Ex-M PI125D	Ex-M PI140D	Ex-M PI200D	Ex-M PI250D
Compatible Outdoor Unit	(Ex-M) PI35O	(Ex-M) PI50O	(Ex-M) PI60O	(Ex-M) PI71O	(Ex-M) PI100O	(Ex-M) PI125O	(Ex-M) PI140O	(Ex-M) PI200O	(Ex-M) PI250O
Set	Ex-M PI35	Ex-M PI50	Ex-M PI50	Ex-M PI71	Ex-M PI100	Ex-M PI125	Ex-M PI140	Ex-M PI200	Ex-M PI250

Ducted unit dimensions

HxWxD (mm)	250x900x732		250x1100x732		250x1400x732			470x1360x1120	
Unit Weight (kg)	25	26.5	29.5		37	38	42	88	

Technical specifications

Performance									
Cooling Capacity (Nom.) kW	3.6	5.0	6.1	7.1	9.5	12.5	13.4	19.0	22.0
Heating Capacity (Nom.) kW	4.1	5.5	7.0	8.0	11.2	14.0	16.0	22.4	27.0
Space cooling									
Min. cooling capacity (kW)	1.6	2.3	2.7	3.3	4.9	5.1	5.4	9.2	9.9
Max. cooling capacity (kW)	4.5	5.6	6.7	8.1	11.4	14.0	15.0	22.4	27.0
EER	4.30	4.20	4.10	4.00	4.20	3.70	3.62	3.30	3.05
SEER	6.3	6.4	6.2	6.3	6.5	-	-	-	-
Annual energy consumption (kWh/a)	199	273	343	393	509	-	-	-	-
Energy efficiency class	A++					-	-	-	-
Space heating									
Min. cooling capacity (kW)	1.6	2.5	2.8	3.5	2.7	3.2	3.7	7.1	7.3
Max. cooling capacity (kW)	5.2	7.3	8.2	10.2	14.0	16.0	18.0	25.0	31.0
COP	4.20	4.40	4.40	4.20	4.40	3.72	3.90	3.50	3,40
SCOP	4.2	4.4	4.2	4.3	4.4	-	-	-	-
Annual energy consumption (kWh/a)	799	1202	1463	1585	2446	-	-	-	-
Energy efficiency class	-					-	-	-	-
Refrigerant	R-32 (R410a optional)								
Power Supply	1~/220-240V/50Hz (60Hz on request) - powered by the outdoor unit							1~/220-240V/50Hz (60Hz on request)	
Air Filter	Removable/Washable								
External static Pressure (Pa)	35-50-70-100-150		40-50-70-100-150					75-100-150-200-250	
Air Flow Rate									
L/M/H (m³/min)	8.5 / 10 / 11.5	12 / 14.5 / 17	14 / 17 / 20	14.5 / 18 / 23	23 / 28 / 32	28 / 34 / 37	29.5 / 35.5 / 40	max 80 - depending on Pa	
Sound Level (PWL)									
Cooling dB(A)	49	57		61	63	66		63-64-64	67-67-68
Sound Level (SPL)									
Sound level (L/M1/M2/H) dB(A)	23 / 25 / 28	27 / 33 / 35	25 / 30 / 33	26 / 32 / 37	31 / 36 / 39	35 / 39 / 41	34 / 38 / 41	max 50 - depending on Pa	
Piping connections									
Liquid Pipe (Flare Connection) OD (mm)	6.35		9.52						12.7
Gas Pipe (Flare Connection) OD (mm)	12.7		15.88					25.4	
Max. Length (m)	50		55		100				
Max Height (m)	30								

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Indoor units: Ducted

Available ceiling suspended units

Non-ATEX/Standard	PI35O	PI50O	PI60O	PI71O	PI100O	PI125O	PI140O	PI200O	PI250O
ATEX Zone 2	Ex-M PI35O	Ex-M PI50O	Ex-M PI60O	Ex-M PI71O	Ex-M PI100O	Ex-M PI125O	Ex-M PI140O	Ex-M PI200O	Ex-M PI250O

Outdoor unit dimensions

HxWxD (mm)	630x809x320	943x950x355	870x1100x505			1338x1050x330	
Unit Weight (kg)	46	67	114	116	121	137	138

Technical specifications

Performance	All details are specified on the associated indoor unit								
Cooling Capacity (kW)	3.6	5.0	6.1	7.1	9.5	12.5	13.4	19.0	22.0
Cooling Capacity (BTU)									
Heating Capacity (kW)	4.1	5.0	7.0	8.0	11.2	14.0	16.0	22.4	27.0
Heating Capacity (BTU)									
Power Supply	1~/220-240V/50Hz (60Hz on request)				3N~/400V/50 Hz (60Hz on request)				
Breaker Size (A)	16		25		16			32	
Heat Exchanger									
Type	Fin & Tube								
Material - Fin	Al								
Material - Tube	Cu								
Fin Treatment	Anti-Corrosion								
Fan									
Discharge Direction	Front								
Quantity (EA)	1							2	
Cooling Air Flow Rate (m^3/min)	40		55		80	86		140	
Heating Air Flow Rate (m^3/min)	40	34	55		58	92		140	
Sound Level - Cooling (dB(A))	44		47		44	54	56	59	
Sound Level - Heating (dB(A))	46		49		48	56	57	62	
Casing									
Material - Body	EGI Steel Plate								
Operating Temp. Range									
Cooling (°C)	-15 ~ 46								
Heating (°C)	-20 ~ 21								
Refrigerant									
Type	R32 (R410A optional)								
Charge	2		2.8		3.6			6.3	6.8
Pre-charged for up to X metres of pipe length	30				40			30	

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Optional

Refrigerant R410a retrofit
ATEX isolating switch
ATEX zone 2 or 22 converter to connect with 3phase no neutral/400-440V, 50/60 Hz
ATEX zone 2 or 22 converter to connect with 3phase no neutral/400-460V, 50/60 Hz
Infra-red remote control included. ATEX zone 2 or ATEX zone 22 available
Wired remote control (optional): In rugged IP66 casing. Various options depending on required functions as remote alarm, redundant operation, set-point function. Available for ATEX zone 2, ATEX zone 22 or for non-hazardous area.
Offshore corrosion resistance treatment
Communication PCB, for connection to industrial controls
Power split box
Control cabinet for interface with Air Handling Unit (AHU)
Redundant kit

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