

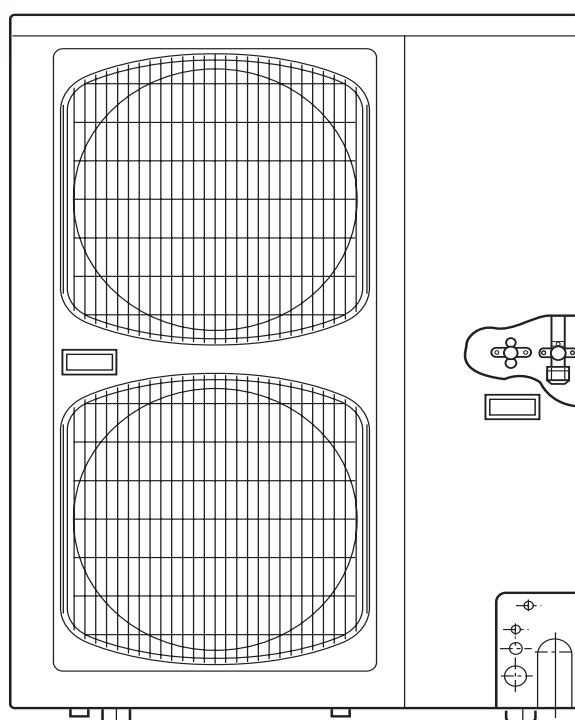
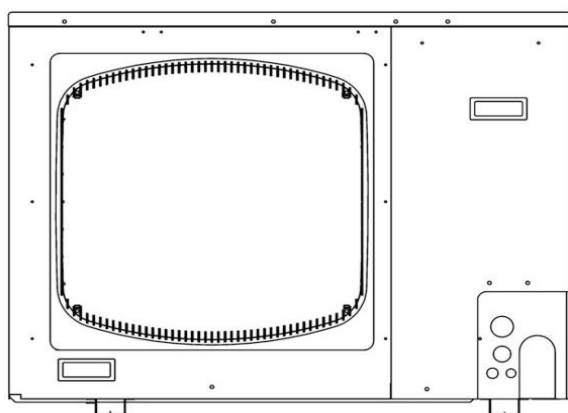
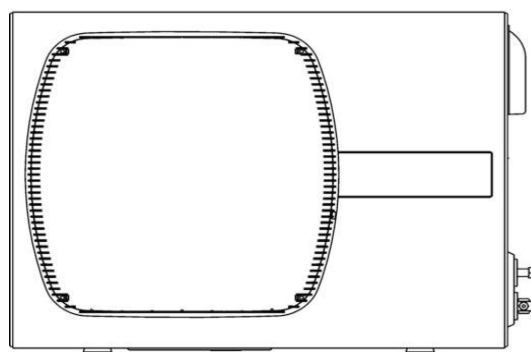
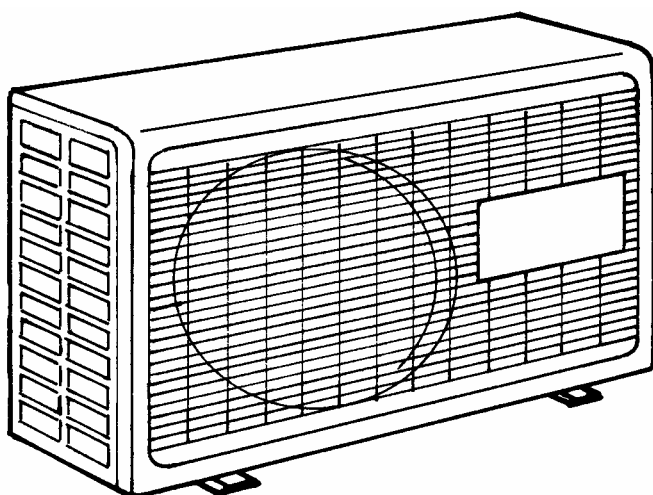
TECHNICAL DATA & SERVICE MANUAL



OUTDOOR UNIT: **GRF98L5TAA** **GRF188L5TAA** **GRF258L7TA**
 GRF128L5TAA **GRF188L7TAA** **GRF368L7TA**
 GRF228L7TAA **GRF488L7TA**

SPLIT SYSTEM AIR CONDITIONER

Model No.	Product Code No.	Model No.	Product Code No.
GRF98L5TAA	387007174	GRF258L7TAA	387007180
GRF128L5TAA	387007175	GRF368L7TAA	387007181
GRF188L5TAA	387007177	GRF488L7TAA	387007182
GRF188L7TAA	387007178		
GRF228L7TAA	387007179		





RoHS

This product does not contain any hazardous substances prohibited by the RoHS Directive.



WARNING

You are requested to use RoHS compliant parts for maintenance or repair.
You are requested to use lead-free solder.

IMPORTANT! Please read before installation

This air conditioning system meets strict safety and operating standards.

For the installer or service person, it is important to install or service the system so that it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.
- The unit must be supplied with a dedicated electrical line.



WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



CAUTION

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If necessary, get help

These instructions are all you need for most installation sites and maintenance conditions.

If you require help for a special problem, contact our sale/service outlet or your certified dealer for additional instructions.

In case of improper installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS

- During installation, connect before the refrigerant system and then the wiring one; proceed in the reverse order when removing the units.

WARNING

When wiring



ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIANS SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked, to ensure the grounding.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring.
Improper connections and inadequate grounding can cause **accidental injury and death.**

- **Ground the unit** following local electrical codes.
- The Yellow/Green wire cannot be used for any connection different from the ground connection.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.
- Do not allow wiring to touch the refrigerant tubing, compressor, or any moving parts of the fan.
- Do not use multi-core cable when wiring the power supply and control lines. Use separate cables for each type of line.

When transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminium fins on the air conditioner can cut your fingers.

When installing...

... In a ceiling or wall

Make sure the ceiling/wall is strong enough to hold the unit-weight. It may be necessary to build a strong wooden or metal frame to provide added support.

... In a room

Properly insulate any tubing run inside a room to prevent "sweating", which can cause dripping and water damage to walls and floors.

... In moist or uneven locations

Use a raised concrete base to provide a solid level foundation for the outdoor unit.

This prevents damage and abnormal vibrations.

... In area with strong winds

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

... In a snowy area (for heat pump-type systems)

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When connecting refrigerant tubing

- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them; screw by hand and then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

NOTE:

Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion, the refrigerant tubing for your particular model is specified as narrow tube for liquid, wide tube for gas.

When servicing

- Turn the power OFF at the main power board before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after the work, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.
- Ventilate the room during the installation or testing the refrigeration system; make sure that, after the installation, no gas leaks are present, because this could produce toxic gas and dangerous if in contact with flames or heat-sources.

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1. OPERATING RANGE

	Temperature	Indoor Air Intake Temp.	Outdoor Air Intake Temp.
Cooling	Maximum	32°C D.B. / 23°C W.B.	43°C D.B.
	Minimum	19°C D.B. / 14°C W.B.	-15°C D.B.

2. SPECIFICATIONS

2-1 Unit Specifications

GRF98L5TAA

Power source	220 - 240V ~ 50Hz
--------------	-------------------

Voltage rating	230V
----------------	------

Performance *	MRAF98C5T	Cooling
Capacity	kW	2,70
	BTU/h	9214
Air circulation (High)	m³/h	450
Moisture removal (High)	Liters/h	0,8

Electrical Rating		Cooling
Available voltage range	V	198 ~ 264
Running amperes	A	3,40
Power input	W	770
Power factor	%	98
C.O.P.	W/W	3,5
Compressor locked rotor amperes	A	17

Features				
Fan speed			1(Hi)	
Compressor			Rotary (Hermetic)	
Refrigerant / Amount charged at shipment			g	R410A / 770
Refrigerant control			Capillary tube	
Power noise level		Hi	dB-A	57
Refrigerant tubing connections			Flare type	
Max. allowable tubing length at shipment			m	7,5
Refrigerant tube diameter		Narrow tube	mm(in.)	6,35 (1/4")
		Wide tube	mm(in.)	9,52 (3/8)

Dimensions & Weight			
Unit dimensions	Height	mm	540
	Width	mm	700
	Depth	mm	265
Package dimensions	Height	mm	568
	Width	mm	815
	Depth	mm	343
Weight	Net	kg	34,0
	Shipping	kg	37,0
Shipping volume		m ³	0,16

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Remarks:

Rating conditions are:

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

* For other INDOOR UNITS' MODELS, please refer to catalogue

GRF128L5TAA

Power source	220 - 240V ~ 50Hz
--------------	-------------------

Voltage rating	230V
----------------	------

Performance *	MRAF128C5T	Cooling
Capacity	kW	3,40
	BTU/h	11603
Air circulation (High)	m³/h	470
Moisture removal (High)	Liters/h	1,5

Electrical Rating		Cooling
Available voltage range	V	198 ~ 264
Running amperes	A	4,70
Power input	W	1050
Power factor	%	97
C.O.P.	W/W	3,2
Compressor locked rotor amperes	A	22

Features				
Fan speed			1(Hi)	
Compressor			Rotary (Hermetic)	
Refrigerant / Amount charged at shipment		g	R410A / 790	
Refrigerant control			Capillary tube	
Power noise level		Hi	dB-A	60
Refrigerant tubing connections			Flare type	
Max. allowable tubing length at shipment			m	7,5
Refrigerant tube diameter		Narrow tube	mm(in.)	6,35 (1/4")
		Wide tube	mm(in.)	12,7(1/2")

Dimensions & Weight			
Unit dimensions	Height	mm	540
	Width	mm	700
	Depth	mm	265
Package dimensions	Height	mm	568
	Width	mm	815
	Depth	mm	343
Weight	Net	kg	34,0
	Shipping	kg	37,0
Shipping volume		m ³	0,16

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Remarks:

Rating conditions are:

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

* For other INDOOR UNITS' MODELS, please refer to catalogue

GRF188L5TAA

Power source	220 - 240V ~ 50Hz
--------------	-------------------

Voltage rating	230V
----------------	------

Performance *	MPAF188C5T	Cooling
Capacity	kW	5,20
	BTU/h	17746
Air circulation (High)	m³/h	760
Moisture removal (High)	Liters/h	2

Electrical Rating		Cooling
Available voltage range	V	198 ~ 264
Running amperes	A	7,10
Power input	W	1600
Power factor	%	98
C.O.P.	W/W	3,3
Compressor locked rotor amperes	A	26

Features				
Fan speed		1(Hi)		
Compressor		Rotary (Hermetic)		
Refrigerant / Amount charged at shipment		g	R410A / 1260	
Refrigerant control		Capillary tube		
Power noise level		Hi	dB-A	63
Refrigerant tubing connections		Flare type		
Max. allowable tubing length at shipment		m	7,5	
Refrigerant		Narrow tube	mm(in.)	6,35 (1/4")
tube diameter		Wide tube	mm(in.)	12,7(1/2")

Dimensions & Weight			
Unit dimensions	Height	mm	630
	Width	mm	830
	Depth	mm	345
Package dimensions	Height	mm	690
	Width	mm	971
	Depth	mm	388
Weight	Net	kg	55,0
	Shipping	kg	60,0
Shipping volume		m ³	0,26

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Remarks:

Rating conditions are:

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

* For other INDOOR UNITS' MODELS, please refer to catalogue

GRF188L7TAA

Power source	380 - 415V 3N ~ 50Hz
Voltage rating	400V
Control Circuit	230V ~ 50Hz

Performance *	MPAF188C5T	Cooling
Capacity	kW	5,30
	BTU/h	18087
Air circulation (High)	m³/h	760
Moisture removal (High)	Liters/h	2

Electrical Rating	Cooling
Available voltage range	V
Running amperes	A
Power input	W
Power factor	%
C.O.P.	W/W
Compressor locked rotor amperes	A

Features	
Fan speed	1(Hi)
Compressor	Rotary (Hermetic)
Refrigerant / Amount charged at shipment	g
Refrigerant control	Capillary tube
Power noise level	Hi
Refrigerant tubing connections	dB-A
Max. allowable tubing length at shipment	Flare type
Refrigerant	m
Refrigerant tube diameter	Narrow tube mm(in.)
	Wide tube mm(in.)

Dimensions & Weight	
Unit dimensions	Height
	Width
	Depth
Package dimensions	Height
	Width
	Depth
Weight	Net
	Shipping
Shipping volume	m³

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Remarks:

Rating conditions are:

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

* For other INDOOR UNITS' MODELS, please refer to catalogue

GRF228L7TAA

Power source	380 - 415V 3N ~ 50Hz
Voltage rating	400V
Control Circuit	230V ~ 50Hz

Performance *		MPAF228C5T	Cooling
Capacity		kW	6,50
		BTU/h	22182
Air circulation (High)		m³/h	830
Moisture removal (High)		Liters/h	2,5

Electrical Rating		Cooling
Available voltage range	V	342 ~ 418
Running amperes	A	4,20
Power input	W	2080
Power factor	%	215
C.O.P.	W/W	3,1
Compressor locked rotor amperes	A	27

Features			
Fan speed			1(Hi)
Compressor			Rotary (Hermetic)
Refrigerant / Amount charged at shipment		g	R410A / 1440
Refrigerant control			Capillary tube
Power noise level	Hi	dB-A	67
Refrigerant tubing connections			Flare type
Max. allowable tubing length at shipment		m	7,5
Refrigerant tube diameter	Narrow tube	mm(in.)	6,35 (1/4")
	Wide tube	mm(in.)	15,88 (5/8)

Dimensions & Weight			
Unit dimensions	Height	mm	735
	Width	mm	942
	Depth	mm	341
Package dimensions	Height	mm	755
	Width	mm	1000
	Depth	mm	400
Weight	Net	kg	71,0
	Shipping	kg	77,0
Shipping volume		m³	0,30

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Remarks:

Rating conditions are:

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

* For other INDOOR UNITS' MODELS, please refer to catalogue

GRF258L7TAA

Power source	380 - 415V 3N ~ 50Hz
Voltage rating	400V
Control Circuit	230V ~ 50Hz

Performance *		CAF258C5T	Cooling
Capacity		kW	7,80
		BTU/h	26618
Air circulation (High)		m³/h	1020
Moisture removal (High)		Liters/h	3

Electrical Rating		Cooling
Available voltage range	V	342 ~ 456
Running amperes	A	5,10
Power input	W	2580
Power factor	%	220
C.O.P.	W/W	3,0
Compressor locked rotor amperes	A	27

Features			
Fan speed			1(Hi)
Compressor			Rotary (Hermetic)
Refrigerant / Amount charged at shipment		g	R410A / 1540
Refrigerant control			Capillary tube
Power noise level	Hi	dB-A	68
Refrigerant tubing connections			Flare type
Max. allowable tubing length at shipment		m	7,5
Refrigerant tube diameter	Narrow tube	mm(in.)	6,35 (1/4")
	Wide tube	mm(in.)	15,88(5/8")

Dimensions & Weight			
Unit dimensions	Height	mm	735
	Width	mm	942
	Depth	mm	341
Package dimensions	Height	mm	755
	Width	mm	1000
	Depth	mm	400
Weight	Net	kg	71,0
	Shipping	kg	77,0
Shipping volume		m³	0,30

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Remarks:

Rating conditions are:

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

* For other INDOOR UNITS' MODELS, please refer to catalogue

GRF368L7TAA

Power source	380 - 415V 3N ~ 50Hz
Voltage rating	400V
Control Circuit	230V ~ 50Hz

Performance *	CAF368C5T	Cooling
Capacity	kW	10,40
	BTU/h	35491
Air circulation (High)	m³/h	1920
Moisture removal (High)	Liters/h	3,5

Electrical Rating	Cooling
Available voltage range	V
Running amperes	A
Power input	W
Power factor	%
C.O.P.	W/W
Compressor locked rotor amperes	A

Features	
Fan speed	1(Hi)
Compressor	Rotary (Hermetic)
Refrigerant / Amount charged at shipment	g
Power noise level	Hi
Refrigerant tubing connections	dB-A
Max. allowable tubing length at shipment	m
Refrigerant	Narrow tube
tube diameter	Wide tube

Dimensions & Weight	
Unit dimensions	Height
	Width
	Depth
Package dimensions	Height
	Width
	Depth
Weight	Net
	Shipping
Shipping volume	m³

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Remarks:

Rating conditions are:

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

* For other INDOOR UNITS' MODELS, please refer to catalogue

GRF488L7TAA

Power source	380 - 415V 3N ~ 50Hz
Voltage rating	400V
Control Circuit	230V ~ 50Hz

Performance *	CAF488C5T	Cooling
Capacity	kW	14,10
	BTU/h	48118
Air circulation (High)	m³/h	1920
Moisture removal (High)	Liters/h	5

Electrical Rating	Cooling
Available voltage range	V
Running amperes	A
Power input	W
Power factor	%
C.O.P.	W/W
Compressor locked rotor amperes	A

Features	
Fan speed	1(Hi)
Compressor	Rotary (Hermetic)
Refrigerant / Amount charged at shipment	g
Power noise level	Hi
Refrigerant tubing connections	dB-A
Max. allowable tubing length at shipment	m
Refrigerant	Narrow tube
tube diameter	Wide tube

Dimensions & Weight	
Unit dimensions	Height
	Width
	Depth
Package dimensions	Height
	Width
	Depth
Weight	Net
	Shipping
Shipping volume	m³

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Remarks:

Rating conditions are:

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

* For other INDOOR UNITS' MODELS, please refer to catalogue

2-2 Major Component Specifications

Outdoor Unit: **GRF98L5TAA**

Compressor			
Type			Rotary (Hermetic)
Compressor model			5PS102EAG01
Nominal input	W		700
Compressor oil...Amount	cc.		RB68A / Freol Alpha 68M...350
Coil resistance (Ambient temp. 20°C)	Ω		C-R: 3,863 C-S: 3,309
Overload relay			External (OLR T)
Safety devices	Type		MRA99901-9201
	Operating Temp. Open	°C	N/A
	Close	°C	N/A
Run capacitor	μF		30
	VAC		400

Fan & Fan Motor			
Type			Propeller
Q'ty Dia.			1.... Ø 370
Fan motor model...Q'ty			IB-966-501...1
No. Of poles...rpm (230 V, High)			6...865
Nominal output	W		21
Coil resistance (Ambient temp. 25 °C)	Ω		BRN-WHT: 242.4 WHT-YEL: 408.1
Safety devices	Type		Thermal protector
	Operating temp. Open	°C	120 ± 5
	Close	°C	-
Run capacitor	μF		1,5
	VAC		450

Heat Exch. Coil			
Coil			Aluminium plate fin / Copper tube
Rows			2
Fin pitch	mm		1,4
Face area	m ²		0,34

External Finish	Acrylic baked-on enamel finish
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DATA SUBJECT TO CHANGE WITHOUT NOTICE

Outdoor Unit: **GRF128L5TAA**

Compressor			
Type			Rotary (Hermetic)
Compressor model			5PS132EAD01
Nominal output	W		900
Compressor oil...Amount	cc.		RB68A / Freol Alpha 68M...350
Coil resistance (Ambient temp. 20°C)	Ω		C-R: 2,798 C-S: 5,432
Overload relay			External (OLR T)
Safety devices	Type		MRA98533-9201
	Operating Temp. Open	°C	N/A
	Close	°C	N/A
Run capacitor	μF		25
	VAC		400

Fan & Fan Motor			
Type			Propeller
Q'ty Dia.			1.... Ø 370
Fan motor model...Q'ty			IB-966-501...1
No. Of poles...rpm (230 V, High)			6...865
Nominal output	W		21
Coil resistance (Ambient temp. 25 °C)	Ω		BRN-WHT: 242.4 WHT-YEL: 408.1
Safety devices	Type		Thermal protector
	Operating temp. Open	°C	120 ± 5
	Close	°C	-
Run capacitor	μF		1,5
	VAC		450

Heat Exch. Coil			
Coil			Aluminium plate fin / Copper tube
Rows			2
Fin pitch	mm		1,4
Face area	m ²		0,34

External Finish	Acrylic baked-on enamel finish
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DATA SUBJECT TO CHANGE WITHOUT NOTICE

Outdoor Unit: **GRF188L5TAA**

Compressor			
Type			Rotary (Hermetic)
Compressor model			5KS205EAA21
Nominal input	W		1700
Compressor oil...Amount	cc.		FV50S ...670
Coil resistance (Ambient temp. 20°C)	Ω		C-R: 1,780 C-S: 2,175
Overload relay			Internal
Safety devices	Type		Thermal protector
	Operating Temp. Open	°C	N/A
	Close	°C	N/A
Run capacitor	μF		50
	VAC		370

Fan & Fan Motor			
Type			Propeller
Q'ty Dia.			1.... Ø 400
Fan motor model...Q'ty			KFG6-51SB5P...1
No. Of poles...rpm (230 V, High)			6...900
Nominal output	W		40
Coil resistance (Ambient temp. 25 °C)	Ω		BRN-WHT: 98.5 WHT-PNK: 201.0
Safety devices	Type		Thermal protector
	Operating temp. Open	°C	130 ± 5
	Close	°C	80 ± 15
Run capacitor	μF		2
	VAC		440

Heat Exch. Coil		
Coil		Aluminium plate fin / Copper tube
Rows		2
Fin pitch	mm	1,5
Face area	m ²	0,51

External Finish	Acrylic baked-on enamel finish
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DATA SUBJECT TO CHANGE WITHOUT NOTICE

Outdoor Unit: **GRF188L7TAA**

Compressor			
Type			Rotary (Hermetic)
Compressor model			5KS205PAA21
Nominal input	W		1780
Compressor oil...Amount	cc.		FV50S ...670
Coil resistance (Ambient temp. 20°C)	Ω		U-V: 7,767 U-W: 7,943 V-W: 7,630
Overload relay			Internal
Safety devices	Type		Thermal protector
	Operating Temp. Open	°C	N/A
	Close	°C	N/A
Run capacitor	μF		--
	VAC		--

Fan & Fan Motor			
Type			Propeller
Q'ty Dia.			1.... Ø 400
Fan motor model...Q'ty			KFG6-51SB5P...1
No. Of poles...rpm (230 V, High)			6...900
Nominal output	W		40
Coil resistance (Ambient temp. 25 °C)	Ω		BRN-WHT: 98.5 WHT-PNK: 201.0
Safety devices	Type		Thermal protector
	Operating temp. Open	°C	130 ± 5
	Close	°C	80 ± 15
Run capacitor	μF		2
	VAC		440

Heat Exch. Coil		
Coil		Aluminium plate fin / Copper tube
Rows		2
Fin pitch	mm	1,5
Face area	m ²	0,51

External Finish	Acrylic baked-on enamel finish
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DATA SUBJECT TO CHANGE WITHOUT NOTICE

Outdoor Unit: **GRF228L7TAA**

Compressor			
Type			Rotary (Hermetic)
Compressor model			5JS270PAA21
Nominal input	W		1800
Compressor oil...Amount	cc.		FV50S ... 1130
Coil resistance (Ambient temp. 20°C)	Ω		U-V: 5,786 U-W: 5,954 V-W: 5,562
Overload relay			Internal
Safety devices	Type		Thermal protector
	Operating Temp. Open	°C	N/A
	Close	°C	N/A
Run capacitor	μF		--
	VAC		--

Fan & Fan Motor			
Type			Propeller
Q'ty Dia.			1 Ø 460
Fan motor model...Q'ty			Y7S623B54 ... 1
No. Of poles...rpm (230 V, High)			4 ... 760
Nominal output	W		60
Coil resistance (Ambient temp. 25 °C)	Ω		WHT - PNK: 50,7 WHT - BRN: 88,9
Safety devices	Type		Thermal protector
	Operating temp. Open	°C	130 ± 5
	Close	°C	N/A
Run capacitor	μF		6
	VAC		440

Heat Exch. Coil		
Coil		Aluminium plate fin / Copper tube
Rows		2
Fin pitch	mm	1,4
Face area	m ²	0,60

External Finish	Acrylic baked-on enamel finish
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DATA SUBJECT TO CHANGE WITHOUT NOTICE

Outdoor Unit: **GRF258L7TAA**

Compressor			
Type			Rotary (Hermetic)
Compressor model			5JS330PBA21
Nominal input	W		2845 / 2895
Compressor oil...Amount	cc.		FV50S ...1130
Coil resistance (Ambient temp. 20°C)	Ω		U-V: 5,786 U-W: 5,954 V-W: 5,562
Overload relay			Internal
Safety devices	Type		Thermal protector
	Operating Temp. Open	°C	N/A
	Close	°C	N/A
Run capacitor	μF		--
	VAC		--

Fan & Fan Motor			
Type			Propeller
Q'ty Dia.			1.... Ø 460
Fan motor model...Q'ty			Y7S623B54 ... 1
No. Of poles...rpm (230 V, High)			4 ... 760
Nominal output	W		60
Coil resistance (Ambient temp. 25 °C)	Ω		WHT - PNK: 50,7 WHT - BRN: 88,9
Safety devices	Type		Thermal protector
	Operating temp. Open	°C	130 ± 5
	Close	°C	N/A
Run capacitor	μF		6
	VAC		440

Heat Exch. Coil		
Coil		Aluminium plate fin / Copper tube
Rows		2
Fin pitch	mm	1,4
Face area	m ²	0,60

External Finish	Acrylic baked-on enamel finish
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DATA SUBJECT TO CHANGE WITHOUT NOTICE

Outdoor Unit: **GRF368L7TAA**

Compressor			
Type			Rotary (Hermetic)
Compressor model			5JD420PAA02
Nominal input	W		3500
Compressor oil...Amount	cc.		RB68A o Freol Alpha68M ...1300
Coil resistance (Ambient temp. 20°C)	Ω		U-V: 3,478 U-W: 3,576 V-W: 3,344
Overload relay			Internal
Safety devices	Type		Thermal protector
	Operating Temp. Open	°C	N/A
	Close	°C	N/A
Run capacitor	μF		--
	VAC		--

Fan & Fan Motor			
Type			Propeller
Q'ty Dia.			1.... Ø 460
Fan motor model...Q'ty			Y7S623B54 ... 1
No. Of poles...rpm (230 V, High)			4 ... 760
Nominal output	W		60
Coil resistance (Ambient temp. 25 °C)	Ω		WHT - PNK: 50,7 WHT - BRN: 88,9
Safety devices	Type		Thermal protector
	Operating temp. Open	°C	130 ± 5
	Close	°C	N/A
Run capacitor	μF		6
	VAC		440

Heat Exch. Coil		
Coil		Aluminium plate fin / Copper tube
Rows		2
Fin pitch	mm	1,5
Face area	m ²	0,53

External Finish	Acrylic baked-on enamel finish
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DATA SUBJECT TO CHANGE WITHOUT NOTICE

Outdoor Unit: **GRF488L7TAA**

Compressor			
Type			Rotary (Hermetic)
Compressor model			ZP67KCE-TFD
Nominal input	W		5200
Compressor oil...Amount	cc.		POE ...1660
Coil resistance (Ambient temp. 20°C)	Ω		U-V: 2,5 U-W: 2,5 V-W:2,5
Overload relay			Internal
Safety devices	Type		Thermal protector
	Operating Temp. Open	°C	N/A
	Close	°C	N/A
Run capacitor	μF		--
	VAC		--

Fan & Fan Motor			
Type			Propeller
Q'ty Dia.			1.... Ø 460
Fan motor model...Q'ty			Y7S623B54 ... 1
No. Of poles...rpm (230 V, High)			4 ... 760
Nominal output	W		60
Coil resistance (Ambient temp. 25 °C)	Ω		WHT - PNK: 50,7 WHT - BRN: 88,9
Safety devices	Type		Thermal protector
	Operating temp. Open	°C	130 ± 5
	Close	°C	N/A
Run capacitor	μF		6
	VAC		440

Heat Exch. Coil		
Coil		Aluminium plate fin / Copper tube
Rows		2
Fin pitch	mm	1,5
Face area	m ²	0,53

External Finish	Acrylic baked-on enamel finish
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DATA SUBJECT TO CHANGE WITHOUT NOTICE

2-3 Other Component Specifications

Thermostat (fan speed control)		YTB-S383
Switching temperature	°C	HIGH...LOW 28,5°C ± 1
Coil resistance	Ω (at 20°C)	LOW...HIGH 31°C ± 1

Relay		H62S
Contact rating		5 A - 220 V
Coil supply	VAC	230
Coil resistance (20 °C)	kΩ	17,2 ± 10%

Power relay (compressor)		(PR)	FINDER 65.31
Contact rating			30 A - 250 V
Coil supply			230 V ~ 50 Hz
Coil resistance (20 °C)		Ω	7250 ± 10%

Negative Phase Relay		
Type		CISE131-V
Rating		AC 380 V, 3-PHASE 50 Hz
Contact Rating		AC 250 V , 8 A
Operation		Positive phase: ON Negative phase: OFF

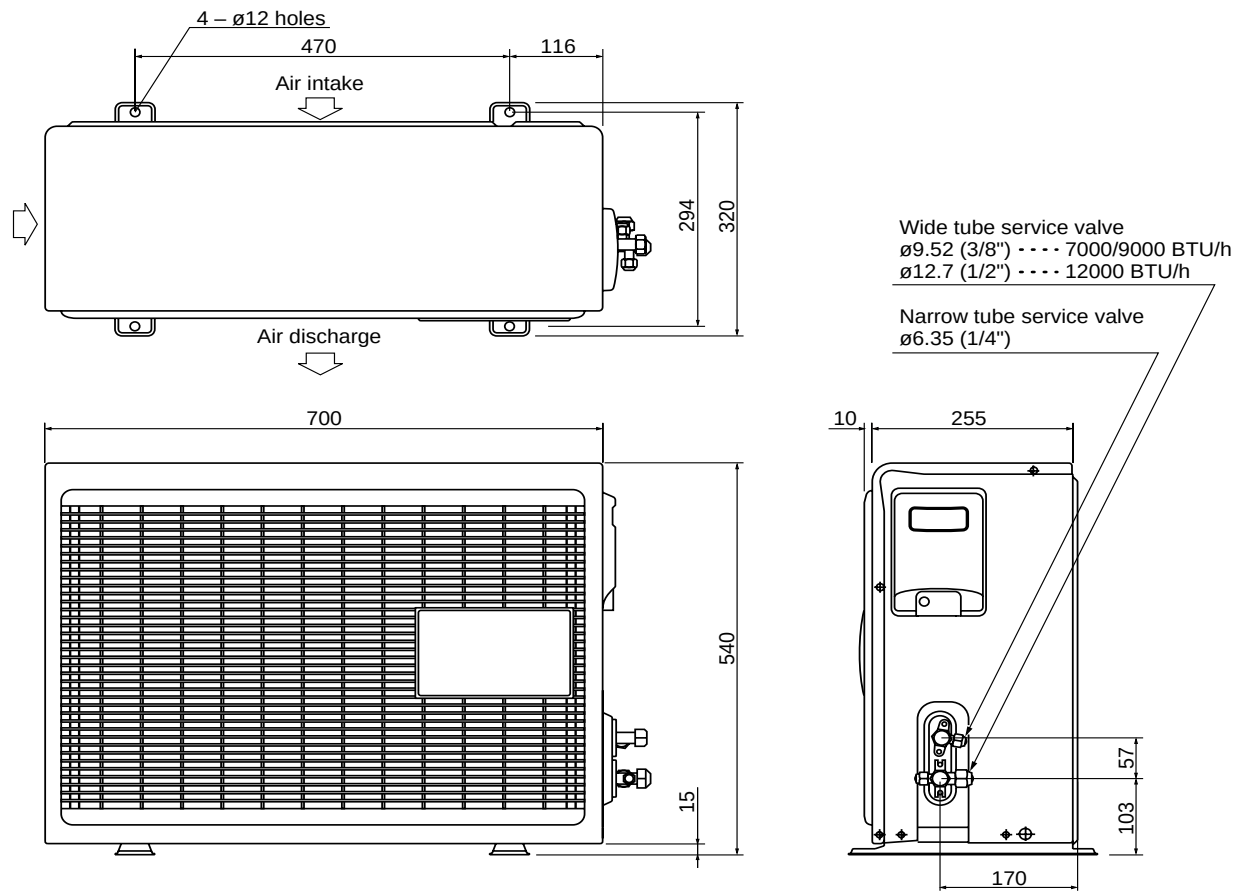
Fan Speed Controller		
Type		RGE-Z1L6-7DS
Factory setting		30bar
Adjustable range		16 to 39bar

3. DIMENSIONAL DATA

Outdoor Unit:

GRF98L5TAA

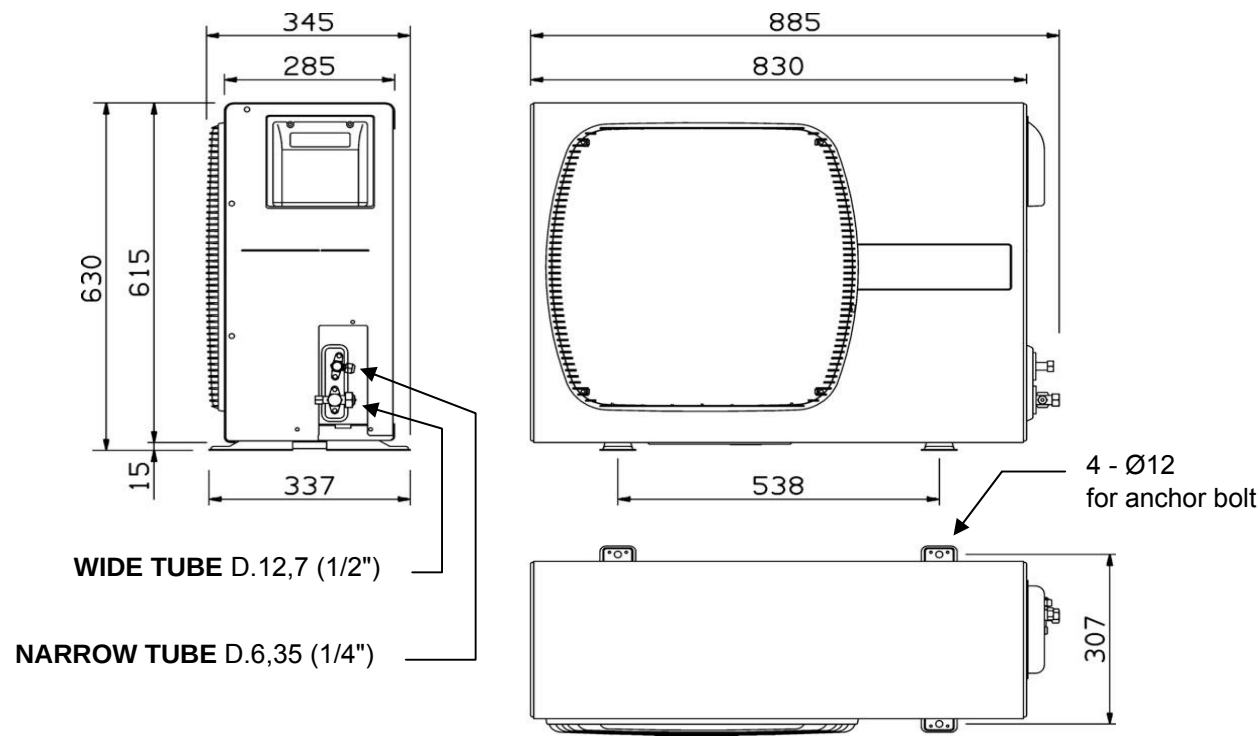
GRF128L5TAA



Unit : mm

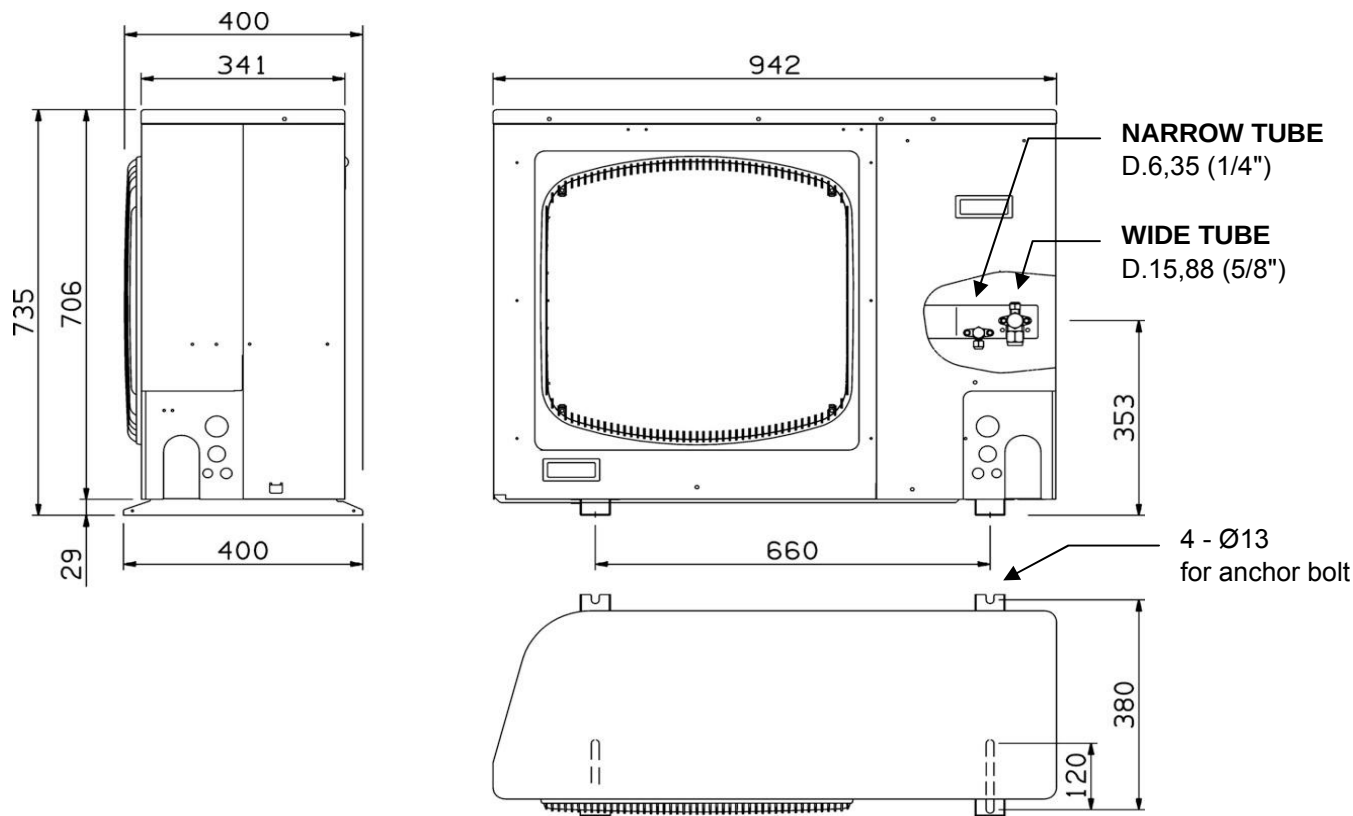
Outdoor Unit: **GRF188L5TAA** **GRF188L7TAA**

dimension mm



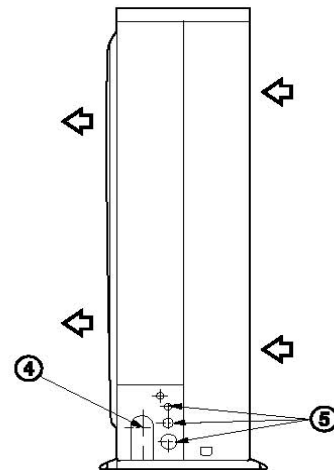
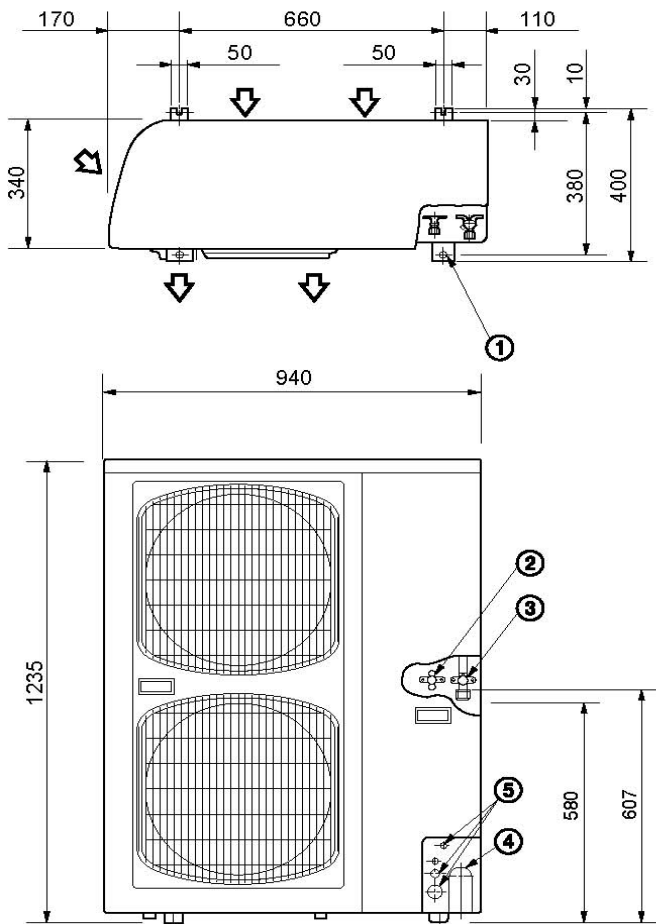
Outdoor Unit: **GRF228L7TAA** **GRF258L7TAA**

dimension mm



Outdoor Unit: **GRF368L7TAA** **GRF488L7TAA**

dimension mm

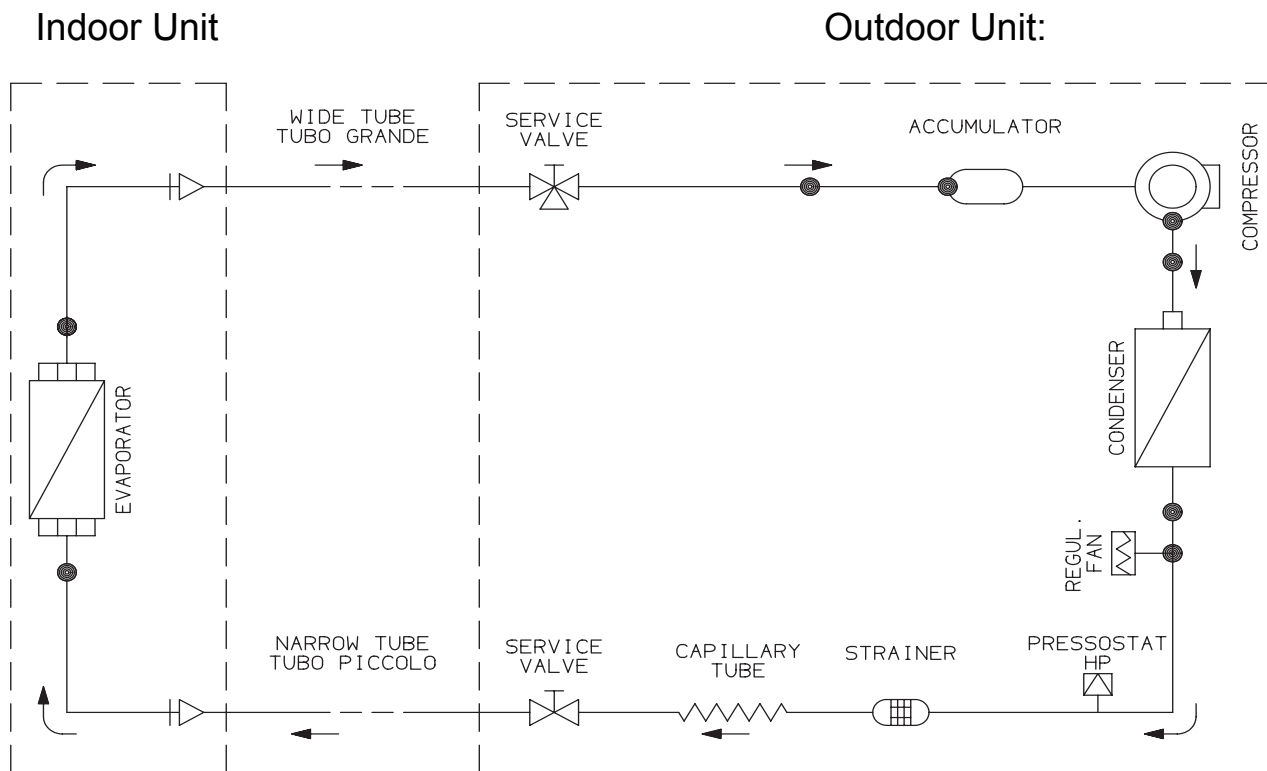


Dimension : mm

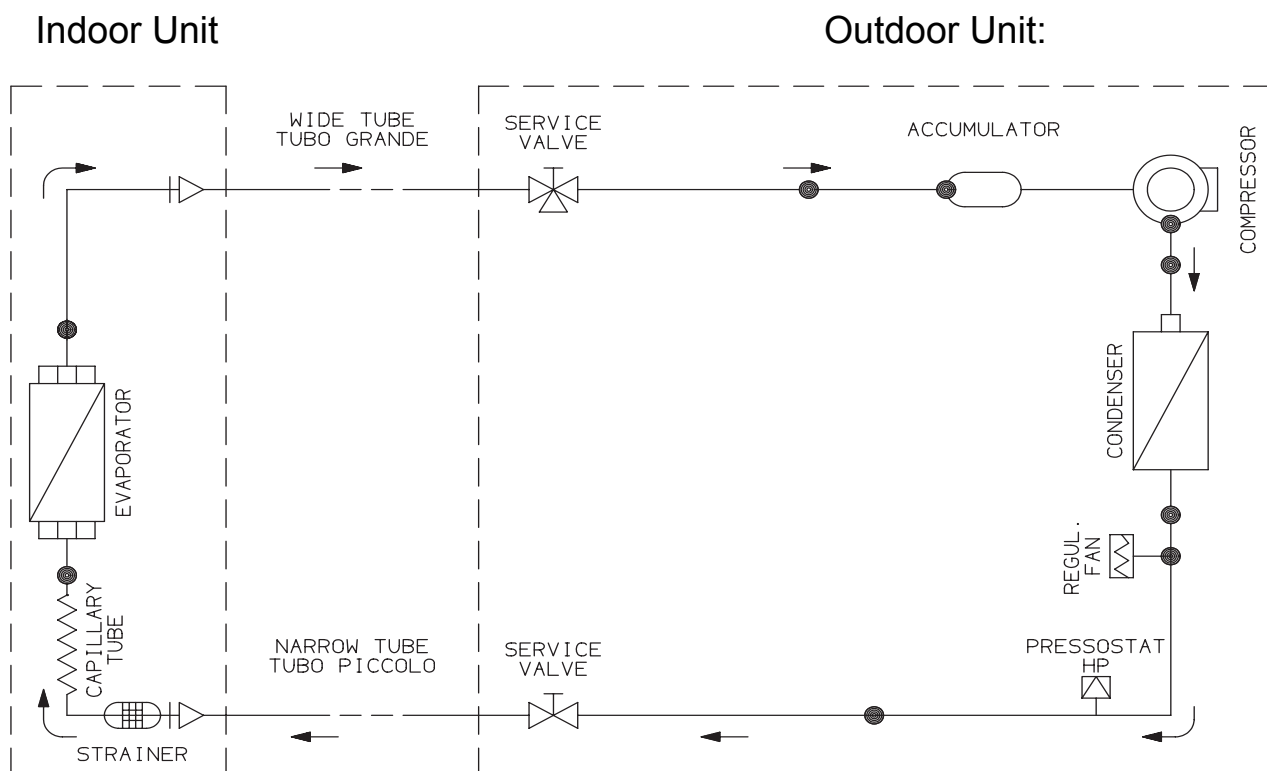
- ① Hole for anchor bolt (4- ϕ 13)
- ② Refrigerant tube joint (narrow tube)
Flare connection 3/8 in (9.52 mm)
- ③ Refrigerant tube joint (wide tube)
Flare connection 3/4 in (19.05 mm)
- ④ Refrigerant tubing inlet
- ⑤ Power supply inlet

4. REFRIGERANT FLOW DIAGRAM

Indoor Unit:	MRAF98C5T CAF258C5T	MRAF128C5T	MPAF188C5T	MPAF228C5T
Outdoor Unit:	GRF98L5TAA GRF228L7TAA	GRF128L5TAA GRF258L7TAA	GRF188L5TAA	GRF188L7TAA



Indoor Unit:	CAF368C5T	CAF488C5T
Outdoor Unit:	GRF368L7TAA	GRF488L7TAA

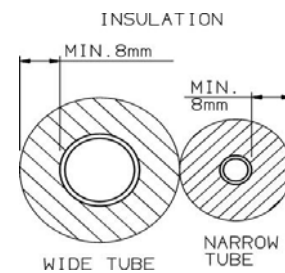


IMPORTANT

Because capillary tubing is used in the outdoor unit, both the wide and narrow tubes of this air conditioner become cold. To prevent heat loss and wet floors due to dripping of condensation, both tubes must be well insulated with a proper insulation material. The thickness of the insulation should be a min. 8mm.

CAUTION

After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack.

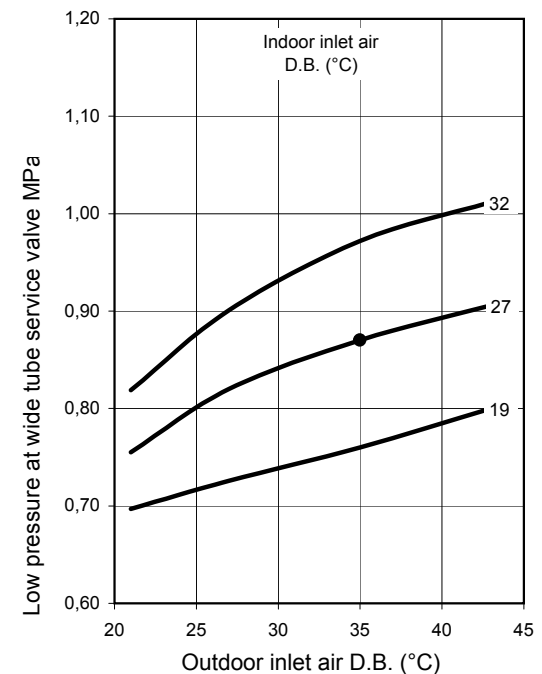
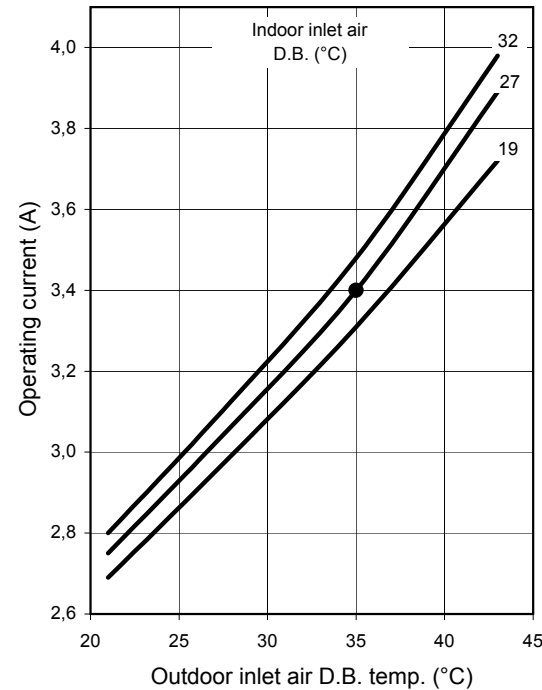


5. PERFORMANCE DATA

5-1 Performance charts

GRF98L5TAA

■ Cooling Characteristics



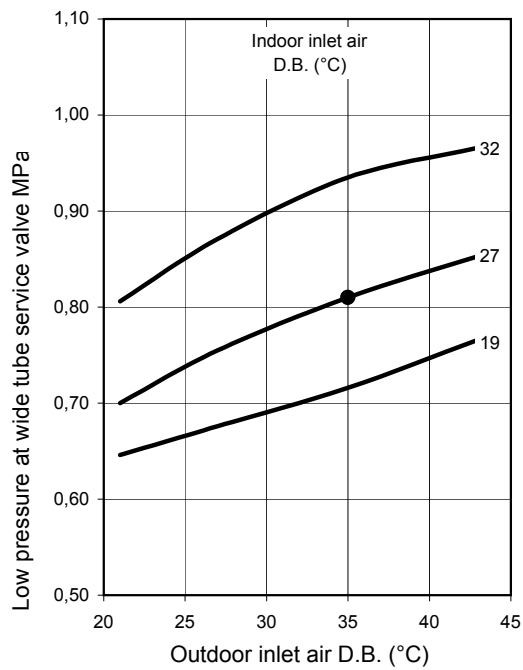
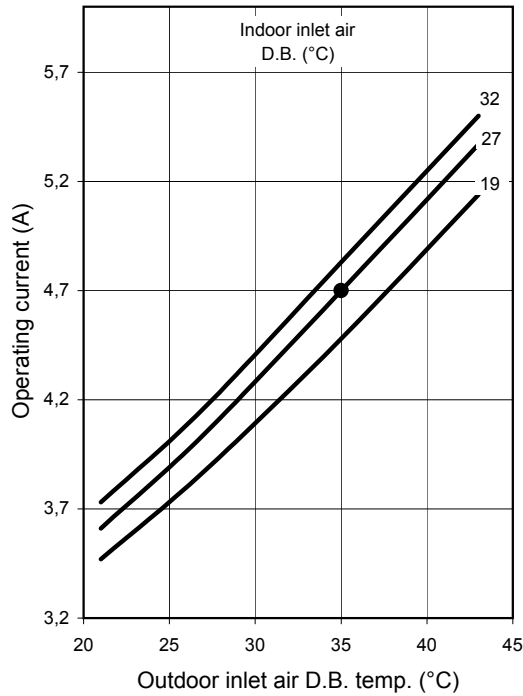
Notes:

Overload prevention operates to protect the air conditioner when outdoor ambient temperature reaches extremely high values in heating mode.

● Points of Rating condition

GRF128L5TAA

■ Cooling Characteristics



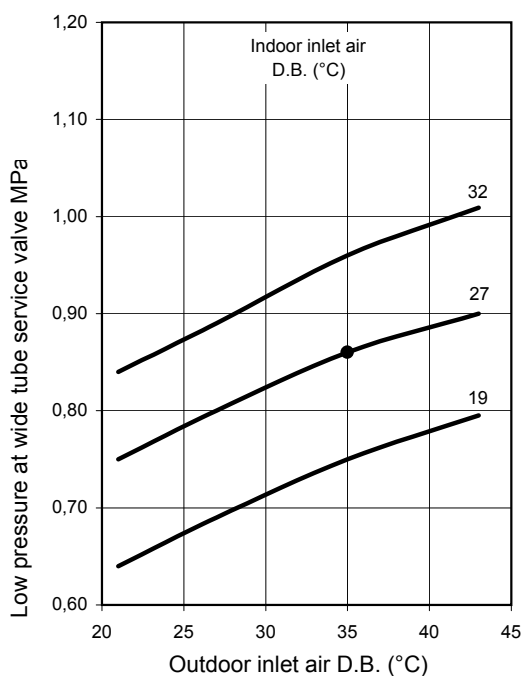
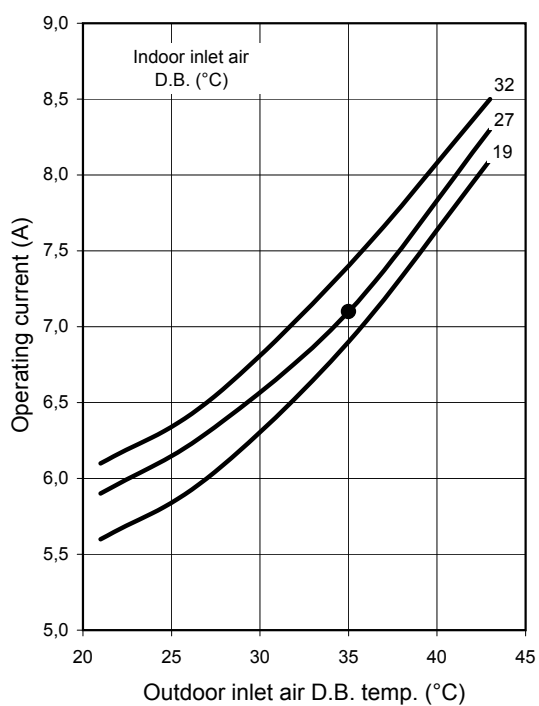
Notes:

Overload prevention operates to protect the air conditioner when outdoor ambient temperature reaches extremely high values in heating mode.

● Points of Rating condition

GRF188L5TAA

■ Cooling Characteristics



Notes:

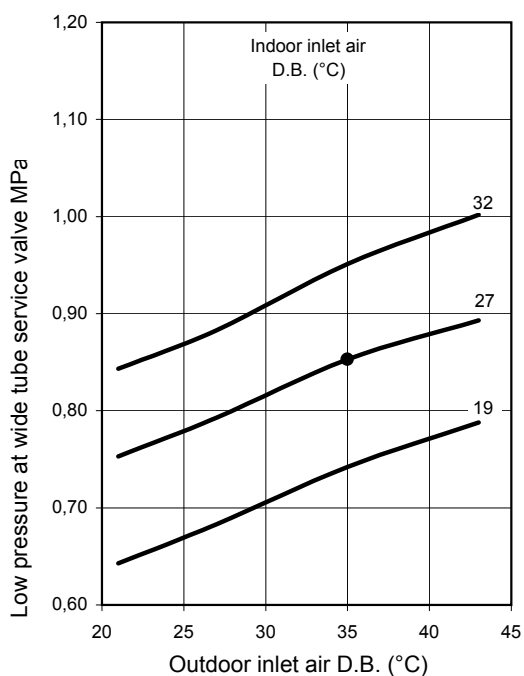
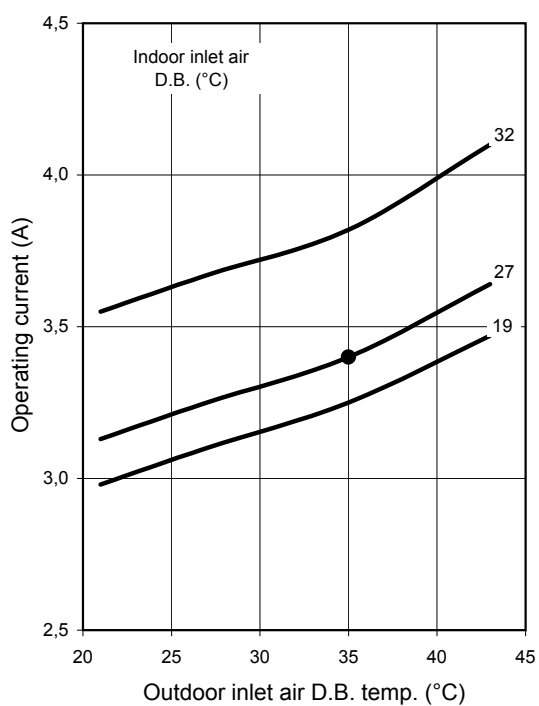
Overload prevention operates to protect the air conditioner when outdoor ambient temperature reaches extremely high values in heating mode.

● Points of Rating condition

Data referred to: **MPAF188C5T**

GRF188L7TAA

■ Cooling Characteristics



Notes:

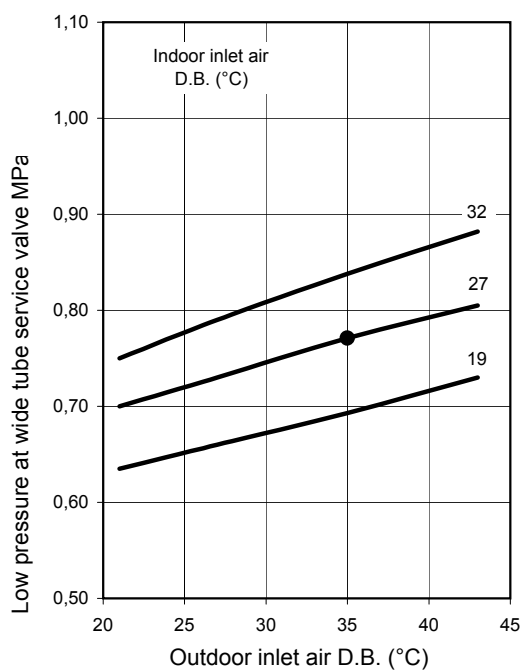
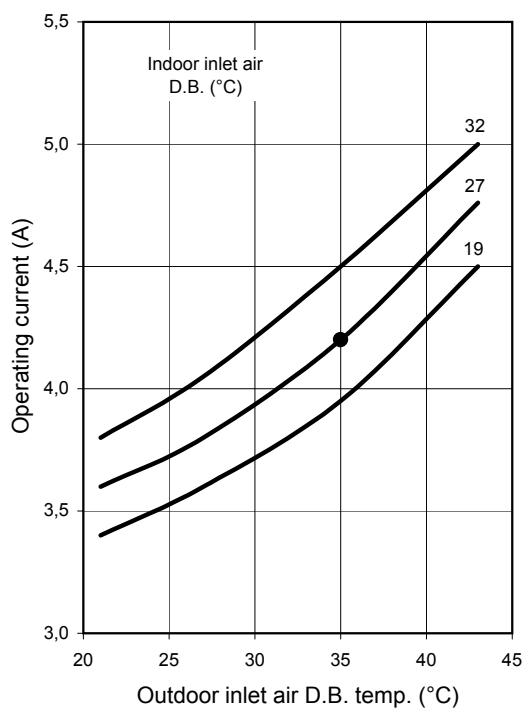
Overload prevention operates to protect the air conditioner when outdoor ambient temperature reaches extremely high values in heating mode.

● Points of Rating condition

Data referred to: **MPAF188C5T**

GRF228L7TAA

■ Cooling Characteristics



Notes:

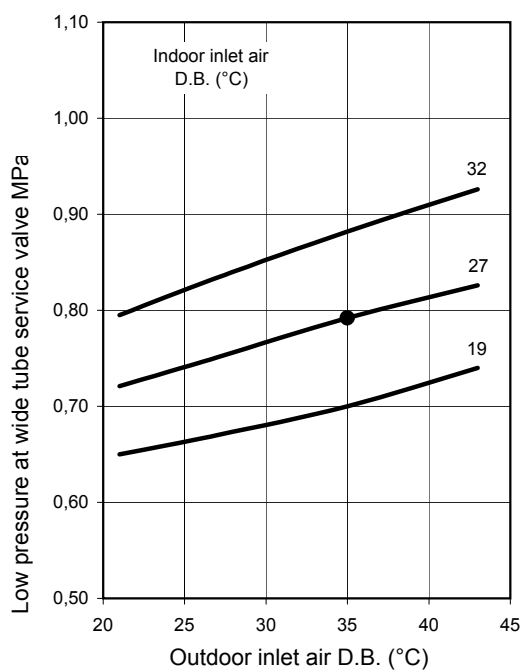
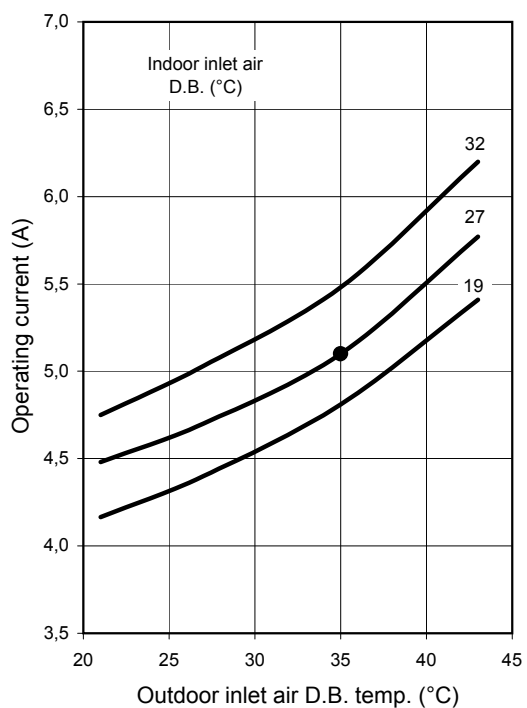
Overload prevention operates to protect the air conditioner when outdoor ambient temperature reaches extremely high values in heating mode.

● Points of Rating condition

Data referred to: **MPAF228C5T**

GRF258L7TAA

■ Cooling Characteristics



Notes:

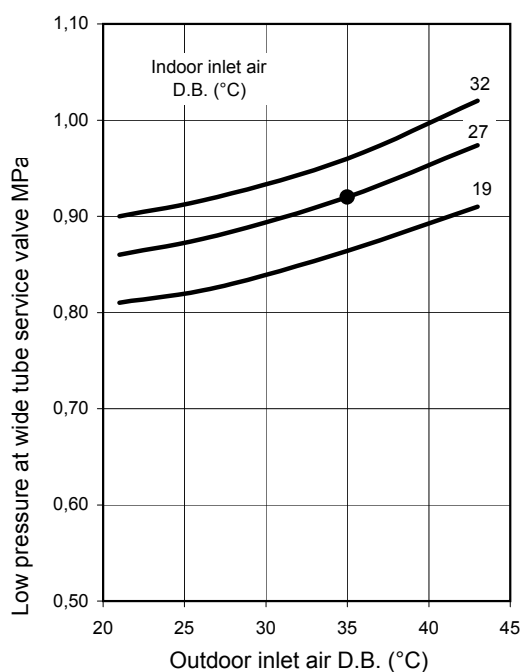
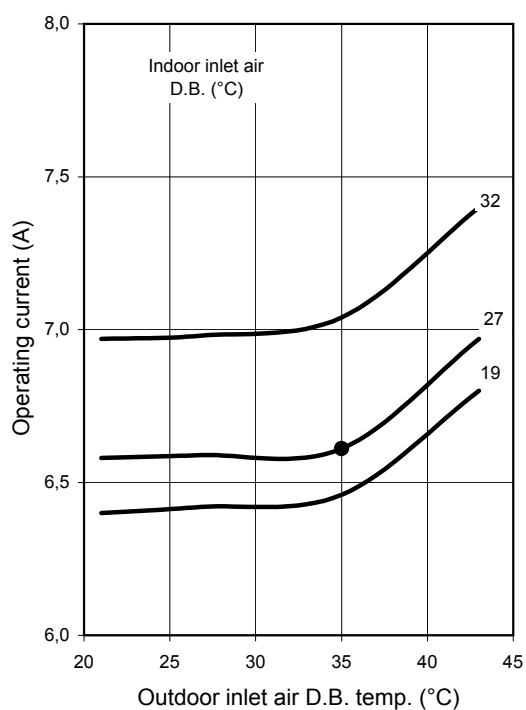
Overload prevention operates to protect the air conditioner when outdoor ambient temperature reaches extremely high values in heating mode.

● Points of Rating condition

Data referred to: **CAF258C5T**

GRF368L7TAA

■ Cooling Characteristics



Notes:

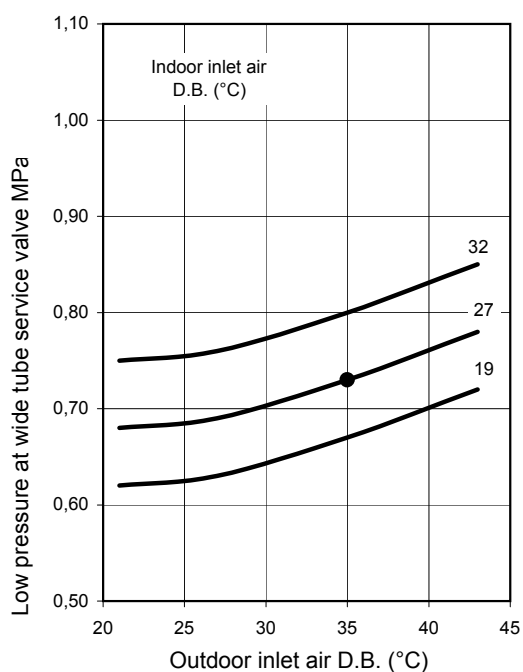
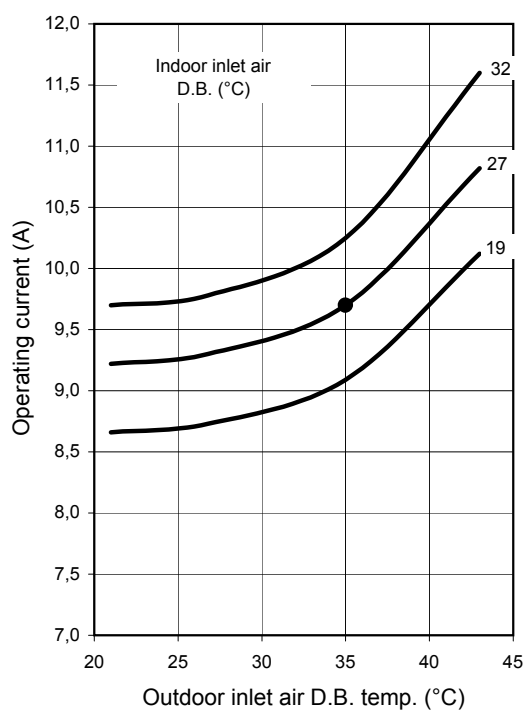
Overload prevention operates to protect the air conditioner when outdoor ambient temperature reaches extremely high values in heating mode.

● Points of Rating condition

Data referred to: **CAF368C5T**

GRF488L7TAA

■ Cooling Characteristics



Notes:

Overload prevention operates to protect the air conditioner when outdoor ambient temperature reaches extremely high values in heating mode.

● Points of Rating condition

Data referred to: **CAF488C5T**

5-2 Cooling Capacity

OUTDOOR UNIT: **GRF98L5TAA**

INDOOR UNIT: **MRAF98C5T**

220 - 240V ~ 50Hz

RATING CAPACITY		2,70 kW		moisture removal		0,8 l/h		
COMP. POWER INPUT		0,68 kW		max comp input		0,79 kW		
AIR FLOW RATE		450 m³/h						
EVAPORATOR		CONDENSER						
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C						
W.B.	D.B.		20	25	30	35	40	43
15		TC	2,73	2,56	2,48	2,37	2,22	2,05
		CM	0,54	0,57	0,60	0,64	0,67	0,71
	21	SHC	1,89	1,75	1,72	1,66	1,59	1,51
	23	SHC	2,14	1,99	1,95	1,89	1,82	1,74
	25	SHC	2,37	2,22	2,17	2,11	2,04	1,96
	27	SHC	2,62	2,45	2,40	2,34	2,22	2,05
	29	SHC	2,73	2,56	2,48	2,37	2,22	2,05
	31	SHC	2,73	2,56	2,48	2,37	2,22	2,05
17		TC	2,92	2,77	2,66	2,54	2,38	2,20
		CM	0,56	0,59	0,63	0,66	0,69	0,73
	21	SHC	1,63	1,53	1,49	1,43	1,36	1,27
	23	SHC	1,88	1,76	1,71	1,66	1,58	1,50
	25	SHC	2,12	2,00	1,94	1,88	1,81	1,73
	27	SHC	2,37	2,23	0,74	2,11	2,04	1,95
	29	SHC	2,62	2,46	2,39	2,34	2,27	2,18
	31	SHC	2,85	2,69	2,62	2,54	2,38	2,20
19		TC	3,11	2,93	2,84	2,70	2,54	2,34
		CM	0,58	0,61	0,65	0,68	0,71	0,75
	21	SHC	1,37	1,29	1,24	1,19	1,12	1,03
	23	SHC	1,62	1,51	1,47	1,41	1,34	1,26
	25	SHC	1,86	1,73	1,70	1,64	1,57	1,49
	27	SHC	2,10	1,95	1,93	2,14	1,80	1,71
	29	SHC	2,34	2,17	2,15	2,09	2,03	1,94
	31	SHC	2,59	2,40	2,38	2,32	2,25	2,17
21		TC	3,27	3,11	3,01	2,86	2,69	2,48
		CM	0,58	0,62	0,66	0,69	0,73	0,77
	23	SHC	1,34	1,27	1,23	1,17	1,10	1,02
	25	SHC	1,59	1,49	1,45	1,40	1,33	1,24
	27	SHC	1,83	1,71	1,68	1,62	1,56	1,47
	29	SHC	2,08	1,93	1,90	1,85	1,78	1,70
	31	SHC	2,31	2,16	2,13	2,07	2,01	1,93
	23		TC	3,48	3,29	3,18	3,01	2,81
		CM	0,59	0,63	0,67	0,71	0,75	0,79
25		SHC	1,31	1,23	1,19	1,13	1,06	0,99
27		SHC	1,55	1,44	1,41	1,35	1,28	1,21
29		SHC	1,80	1,66	1,64	1,58	1,51	1,44
31		SHC	2,05	1,90	1,87	1,80	1,73	1,67

TOTAL COOLING CAPACITY kW
 SHC: SENSIBLE HEAT CAPACITY kW
 CM: COMPRESSOR INPUT kW

RATING CONDITIONS

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

NOTE: Data referred to **MRAF98C5T**

OUTDOOR UNIT: **GRF128L5TAA**
INDOOR UNIT: **MRAF128C5T**

220 - 240V ~ 50Hz

RATING CAPACITY		3,40 kW		moisture removal		1,5 l/h		
COMP. POWER INPUT		0,956 kW		max comp input		1,156 kW		
AIR FLOW RATE		470 m³/h						
EVAPORATOR		CONDENSER						
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C						
W.B.	D.B.		20	25	30	35	40	43
15		TC	3,43	3,22	3,13	2,98	2,79	2,58
		CM	0,68	0,76	0,83	0,90	0,97	1,04
	21	SHC	2,38	2,21	2,17	2,09	2,00	1,90
	23	SHC	2,69	2,50	2,45	2,38	2,29	2,19
	25	SHC	2,99	2,79	2,73	2,66	2,57	2,47
	27	SHC	3,30	3,08	3,02	2,95	2,79	2,58
	29	SHC	3,43	3,22	3,13	2,98	2,79	2,58
	31	SHC	3,43	3,22	3,13	2,98	2,79	2,58
17		TC	3,68	3,49	3,36	3,19	3,00	2,76
		CM	0,71	0,78	0,86	0,93	1,00	1,07
	21	SHC	2,05	1,93	1,88	1,80	1,71	1,60
	23	SHC	2,36	2,22	2,16	2,08	2,00	1,89
	25	SHC	2,67	2,52	2,45	2,37	2,28	2,17
	27	SHC	2,98	2,81	0,74	2,65	2,56	2,46
	29	SHC	3,29	3,10	3,02	2,94	2,85	2,74
	31	SHC	3,59	3,39	3,30	3,19	3,00	2,76
19		TC	3,91	3,70	3,57	3,40	3,19	2,94
		CM	0,74	0,81	0,88	0,96	1,03	1,10
	21	SHC	1,73	1,62	1,57	1,49	1,40	1,30
	23	SHC	2,04	1,90	1,86	1,78	1,69	1,59
	25	SHC	2,35	2,18	2,14	2,06	1,98	1,87
	27	SHC	2,64	2,46	2,42	2,35	2,26	2,16
	29	SHC	2,95	2,73	2,71	2,63	2,55	2,44
	31	SHC	3,26	3,02	2,99	2,92	2,83	2,73
21		TC	4,11	3,92	3,78	3,61	3,39	3,12
		CM	0,81	0,87	0,93	1,00	1,06	1,13
	23	SHC	1,69	1,60	1,54	1,47	1,38	1,28
	25	SHC	2,00	1,87	1,83	1,76	1,67	1,57
	27	SHC	2,31	2,15	2,11	2,04	1,96	1,85
	29	SHC	2,62	2,43	2,39	2,33	2,24	2,14
	31	SHC	2,91	2,71	2,68	2,61	2,53	2,42
23		TC	4,39	4,14	4,01	3,78	3,54	3,30
		CM	0,87	0,93	0,98	1,04	1,10	1,16
	25	SHC	1,65	1,55	1,50	1,42	1,33	1,24
	27	SHC	1,96	1,82	1,78	1,70	1,61	1,52
	29	SHC	2,27	2,09	2,07	1,99	1,90	1,81
	31	SHC	2,58	2,39	2,36	2,27	2,18	2,10

TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

NOTE: Data referred to **MRAF128C5T**

OUTDOOR UNIT: **GRF188L5TAA**
INDOOR UNIT: **MPAF188C5T**

220 - 240V ~ 50Hz

RATING CAPACITY		5,20 kW		moisture removal		2 l/h		
COMP. POWER INPUT		1,443 kW		max comp input		1,793 kW		
AIR FLOW RATE		760 m³/h						
EVAPORATOR		CONDENSER						
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C						
W.B.	D.B.		20	25	30	35	40	43
15		TC	5,25	4,93	4,78	4,56	4,27	3,95
		CM	0,96	1,09	1,22	1,36	1,49	1,62
	21	SHC	3,64	3,38	3,31	3,20	3,06	2,91
	23	SHC	4,12	3,83	3,75	3,64	3,50	3,35
	25	SHC	4,57	4,27	4,18	4,07	3,93	3,78
	27	SHC	5,05	4,72	4,62	4,51	4,27	3,95
	29	SHC	5,25	4,93	4,78	4,56	4,27	3,95
	31	SHC	5,25	4,93	4,78	4,56	4,27	3,95
17		TC	5,63	5,34	5,13	4,88	4,59	4,23
		CM	1,00	1,14	1,27	1,40	1,53	1,66
	21	SHC	3,14	2,96	2,87	2,76	2,62	2,45
	23	SHC	3,62	3,40	3,30	3,19	3,05	2,89
	25	SHC	4,09	3,85	3,74	3,63	3,49	3,32
	27	SHC	4,56	4,29	0,74	4,06	3,92	3,76
	29	SHC	5,04	4,75	4,61	4,50	4,36	4,19
	31	SHC	5,49	5,19	5,04	4,88	4,59	4,23
19		TC	5,98	5,65	5,46	5,20	4,88	4,50
		CM	1,05	1,18	1,31	1,44	1,57	1,71
	21	SHC	2,64	2,48	2,40	2,28	2,15	1,99
	23	SHC	3,11	2,91	2,84	2,72	2,59	2,43
	25	SHC	3,59	3,33	3,27	3,15	3,03	2,86
	27	SHC	4,04	3,76	3,71	3,80	3,46	3,30
	29	SHC	4,51	4,18	4,14	4,02	3,90	3,73
	31	SHC	4,99	4,62	4,58	4,47	4,33	4,17
21		TC	6,29	5,99	5,79	5,52	5,18	4,77
		CM	1,20	1,31	1,42	1,53	1,64	1,75
	23	SHC	2,58	2,44	2,36	2,25	2,11	1,96
	25	SHC	3,06	2,86	2,79	2,69	2,55	2,40
	27	SHC	3,53	3,30	3,23	3,12	3,00	2,83
	29	SHC	4,00	3,71	3,66	3,56	3,43	3,27
	31	SHC	4,45	4,15	4,10	3,99	3,87	3,71
23		TC	6,71	6,33	6,13	5,79	5,41	5,04
		CM	1,36	1,45	1,53	1,62	1,71	1,79
	25	SHC	2,52	2,37	2,29	2,17	2,03	1,90
	27	SHC	2,99	2,78	2,72	2,60	2,46	2,33
	29	SHC	3,47	3,20	3,17	3,04	2,91	2,77
	31	SHC	3,94	3,65	3,61	3,47	3,33	3,21

TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

NOTE: Data referred to **MPAF188C5T**

OUTDOOR UNIT: **GRF188L7TAA**
INDOOR UNIT: **MPAF188C5T**

380 - 415V 3N ~ 50Hz

RATING CAPACITY		5,30 kW		moisture removal		2 l/h		
COMP. POWER INPUT		1,493 kW		max comp input		1,943 kW		
AIR FLOW RATE		760 m³/h						
EVAPORATOR		CONDENSER						
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C						
W.B.	D.B.		20	25	30	35	40	43
15		TC	5,35	5,02	4,87	4,64	4,36	4,02
		CM	0,86	1,04	1,22	1,40	1,58	1,76
	21	SHC	3,71	3,44	3,38	3,26	3,12	2,96
	23	SHC	4,20	3,90	3,83	3,71	3,57	3,41
	25	SHC	4,66	4,35	4,26	4,15	4,01	3,85
	27	SHC	5,15	4,81	4,71	4,60	4,36	4,02
	29	SHC	5,35	5,02	4,87	4,64	4,36	4,02
	31	SHC	5,35	5,02	4,87	4,64	4,36	4,02
17		TC	5,73	5,44	5,23	4,98	4,68	4,31
		CM	0,91	1,09	1,27	1,45	1,63	1,81
	21	SHC	3,20	3,01	2,93	2,81	2,67	2,50
	23	SHC	3,68	3,46	3,36	3,25	3,11	2,95
	25	SHC	4,17	3,93	3,81	3,70	3,56	3,39
	27	SHC	4,65	4,38	0,74	4,14	4,00	3,84
	29	SHC	5,14	4,84	4,70	4,59	4,45	4,27
	31	SHC	5,60	5,29	5,14	4,98	4,68	4,31
19		TC	6,10	5,76	5,57	5,30	4,98	4,59
		CM	0,95	1,13	1,31	1,49	1,67	1,85
	21	SHC	2,69	2,52	2,44	2,33	2,19	2,03
	23	SHC	3,17	2,97	2,89	2,78	2,64	2,48
	25	SHC	3,66	3,40	3,33	3,21	3,09	2,92
	27	SHC	4,12	3,84	3,78	3,90	3,53	3,36
	29	SHC	4,60	4,26	4,22	4,10	3,98	3,80
	31	SHC	5,08	4,71	4,67	4,55	4,41	4,25
21		TC	6,41	6,11	5,90	5,62	5,28	4,86
		CM	1,22	1,36	1,49	1,63	1,76	1,90
	23	SHC	2,63	2,49	2,41	2,29	2,15	1,99
	25	SHC	3,11	2,92	2,85	2,74	2,60	2,44
	27	SHC	3,60	3,36	3,30	3,18	3,05	2,88
	29	SHC	4,08	3,79	3,73	3,63	3,49	3,33
	31	SHC	4,53	4,23	4,18	4,07	3,94	3,78
23		TC	6,84	6,45	6,24	5,90	5,52	5,14
		CM	1,50	1,58	1,67	1,76	1,85	1,94
	25	SHC	2,57	2,42	2,34	2,21	2,07	1,94
	27	SHC	3,05	2,83	2,78	2,65	2,51	2,37
	29	SHC	3,53	3,26	3,23	3,10	2,96	2,82
	31	SHC	4,02	3,72	3,68	3,54	3,40	3,27

TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

NOTE: Data referred to **MPAF188C5T**

OUTDOOR UNIT: **GRF228L7TAA**
INDOOR UNIT: **MPAF228C5T**

380 - 415V 3N ~ 50Hz

RATING CAPACITY		6,50 kW		moisture removal		2,5 l/h		
COMP. POWER INPUT		1,85 kW		max comp input		2,37 kW		
AIR FLOW RATE		830 m³/h						
EVAPORATOR		CONDENSER						
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C						
W.B.	D.B.		20	25	30	35	40	43
15		TC	6,57	6,16	5,98	5,69	5,34	4,93
		CM	1,13	1,33	1,53	1,74	1,94	2,15
	21	SHC	4,56	4,22	4,14	4,00	3,83	3,63
	23	SHC	5,15	4,79	4,69	4,55	4,38	4,18
	25	SHC	5,72	5,34	5,23	5,09	4,92	4,72
	27	SHC	6,31	5,90	5,78	5,64	5,34	4,93
	29	SHC	6,57	6,16	5,98	5,69	5,34	4,93
	31	SHC	6,57	6,16	5,98	5,69	5,34	4,93
17		TC	7,03	6,67	6,42	6,10	5,74	5,28
		CM	1,18	1,39	1,59	1,79	2,00	2,20
	21	SHC	3,93	3,69	3,59	3,45	3,28	3,07
	23	SHC	4,52	4,25	4,13	3,98	3,82	3,62
	25	SHC	5,11	4,81	4,68	4,54	4,37	4,15
	27	SHC	5,71	5,37	0,74	5,07	4,90	4,71
	29	SHC	6,30	5,93	5,77	5,62	5,45	5,24
	31	SHC	6,86	6,49	6,30	6,10	5,74	5,28
19		TC	7,48	7,07	6,83	6,50	6,10	5,62
		CM	1,24	1,44	1,65	1,85	2,05	2,26
	21	SHC	3,30	3,09	3,00	2,85	2,68	2,49
	23	SHC	3,89	3,64	3,55	3,41	3,24	3,04
	25	SHC	4,49	4,17	4,08	3,94	3,79	3,58
	27	SHC	5,05	4,71	4,63	4,75	4,32	4,13
	29	SHC	5,64	5,23	5,17	5,03	4,88	4,66
	31	SHC	6,23	5,78	5,72	5,58	5,41	5,21
21		TC	7,87	7,49	7,23	6,90	6,47	5,96
		CM	1,53	1,68	1,84	2,00	2,16	2,31
	23	SHC	3,23	3,06	2,95	2,81	2,64	2,44
	25	SHC	3,82	3,58	3,49	3,36	3,19	3,00
	27	SHC	4,41	4,12	4,04	3,90	3,74	3,53
	29	SHC	5,00	4,64	4,58	4,45	4,28	4,08
	31	SHC	5,56	5,19	5,13	4,99	4,83	4,63
23		TC	8,39	7,91	7,66	7,23	6,77	6,30
		CM	1,82	1,93	2,04	2,15	2,26	2,37
	25	SHC	3,15	2,97	2,87	2,71	2,54	2,37
	27	SHC	3,74	3,47	3,41	3,25	3,08	2,91
	29	SHC	4,33	3,99	3,96	3,80	3,63	3,46
	31	SHC	4,92	4,56	4,51	4,34	4,17	4,01

TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

NOTE: Data referred to **MPAF228C5T**

OUTDOOR UNIT: **GRF258L7TAA**
INDOOR UNIT: **CAF258C5T**

380 - 415V 3N ~ 50Hz

RATING CAPACITY		7,80 kW		moisture removal		3 l/h		
COMP. POWER INPUT		2,261 kW		max comp input		3,081 kW		
AIR FLOW RATE		1020 m³/h						
EVAPORATOR		CONDENSER						
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C						
W.B.	D.B.		20	25	30	35	40	43
15		TC	7,88	7,39	7,17	6,83	6,41	5,92
		CM	1,10	1,44	1,78	2,13	2,47	2,81
	21	SHC	5,47	5,07	4,97	4,80	4,60	4,36
	23	SHC	6,18	5,74	5,63	5,46	5,26	5,02
	25	SHC	6,86	6,40	6,27	6,10	5,90	5,66
	27	SHC	7,57	7,08	6,94	6,77	6,41	5,92
	29	SHC	7,88	7,39	7,17	6,83	6,41	5,92
	31	SHC	7,88	7,39	7,17	6,83	6,41	5,92
17		TC	8,44	8,00	7,70	7,33	6,88	6,34
		CM	1,17	1,51	1,85	2,19	2,54	2,88
	21	SHC	4,71	4,43	4,31	4,14	3,93	3,68
	23	SHC	5,42	5,10	4,95	4,78	4,58	4,34
	25	SHC	6,13	5,78	5,61	5,44	5,24	4,99
	27	SHC	6,85	6,44	6,27	6,09	5,88	5,65
	29	SHC	7,56	7,12	6,92	6,75	6,55	6,29
	31	SHC	8,24	7,78	7,56	7,33	6,88	6,34
19		TC	8,97	8,48	8,19	7,80	7,33	6,75
		CM	1,23	1,58	1,92	2,26	2,60	2,95
	21	SHC	3,96	3,71	3,59	3,43	3,22	2,98
	23	SHC	4,67	4,37	4,26	4,09	3,88	3,65
	25	SHC	5,38	5,00	4,90	4,73	4,54	4,29
	27	SHC	6,06	5,65	5,56	5,70	5,19	4,95
	29	SHC	6,77	6,27	6,21	6,04	5,85	5,60
	31	SHC	7,48	6,94	6,87	6,70	6,49	6,26
21		TC	9,44	8,99	8,68	8,27	7,77	7,16
		CM	1,82	2,06	2,30	2,54	2,77	3,01
	23	SHC	3,88	3,67	3,54	3,37	3,17	2,93
	25	SHC	4,58	4,30	4,19	4,04	3,83	3,59
	27	SHC	5,29	4,94	4,85	4,68	4,49	4,24
	29	SHC	6,00	5,57	5,49	5,34	5,14	4,90
	31	SHC	6,67	6,23	6,16	5,99	5,80	5,56
23		TC	10,06	9,49	9,19	8,68	8,12	7,56
		CM	2,40	2,54	2,67	2,81	2,95	3,08
	25	SHC	3,78	3,56	3,44	3,26	3,05	2,85
	27	SHC	4,49	4,17	4,09	3,90	3,70	3,49
	29	SHC	5,20	4,79	4,75	4,56	4,36	4,15
	31	SHC	5,91	5,48	5,41	5,21	5,00	4,82

TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

NOTE: Data referred to **CAF258C5T**

OUTDOOR UNIT: **GRF368L7TAA**
INDOOR UNIT: **CAF368C5T**

380 - 415V 3N ~ 50Hz

RATING CAPACITY		10,40 kW		moisture removal		3,5 l/h		
COMP. POWER INPUT		2,802 kW		max comp input		3,402 kW		
AIR FLOW RATE		1920 m³/h						
EVAPORATOR		CONDENSER						
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C						
W.B.	D.B.		20	25	30	35	40	43
15		TC	10,50	9,86	9,56	9,11	8,55	7,89
		CM	1,99	2,20	2,42	2,63	2,85	3,07
	21	SHC	7,29	6,76	6,62	6,40	6,13	5,81
	23	SHC	8,24	7,66	7,51	7,28	7,01	6,69
	25	SHC	9,15	8,54	8,37	8,14	7,87	7,55
	27	SHC	10,10	9,44	9,25	9,02	8,55	7,89
	29	SHC	10,50	9,86	9,56	9,11	8,55	7,89
	31	SHC	10,50	9,86	9,56	9,11	8,55	7,89
17		TC	11,25	10,67	10,26	9,77	9,18	8,46
		CM	2,07	2,29	2,50	2,72	2,93	3,15
	21	SHC	6,28	5,91	5,74	5,52	5,25	4,91
	23	SHC	7,23	6,79	6,60	6,38	6,10	5,79
	25	SHC	8,18	7,70	7,48	7,26	6,99	6,65
	27	SHC	9,13	8,59	8,37	8,12	7,85	7,53
	29	SHC	10,08	9,49	9,22	9,00	8,73	8,39
	31	SHC	10,98	10,38	10,08	9,77	9,18	8,46
19		TC	11,96	11,30	10,92	10,40	9,77	9,00
		CM	2,15	2,37	2,59	2,80	3,02	3,23
	21	SHC	5,28	4,95	4,79	4,57	4,30	3,98
	23	SHC	6,23	5,82	5,67	5,45	5,18	4,86
	25	SHC	7,18	6,67	6,53	6,31	6,06	5,72
	27	SHC	8,08	7,53	7,42	7,95	6,92	6,60
	29	SHC	9,03	8,37	8,27	8,05	7,80	7,46
	31	SHC	9,97	9,25	9,16	8,93	8,66	8,34
21		TC	12,58	11,98	11,58	11,03	10,35	9,54
		CM	2,36	2,55	2,74	2,93	3,13	3,32
	23	SHC	5,17	4,89	4,73	4,50	4,23	3,91
	25	SHC	6,11	5,73	5,58	5,38	5,11	4,79
	27	SHC	7,06	6,59	6,47	6,24	5,99	5,65
	29	SHC	8,00	7,43	7,33	7,12	6,85	6,53
	31	SHC	8,90	8,30	8,21	7,98	7,73	7,42
23		TC	13,42	12,66	12,25	11,58	10,83	10,08
		CM	2,56	2,73	2,90	3,07	3,23	3,40
	25	SHC	5,04	4,75	4,59	4,34	4,07	3,80
	27	SHC	5,99	5,56	5,45	5,20	4,93	4,66
	29	SHC	6,93	6,39	6,33	6,08	5,81	5,54
	31	SHC	7,88	7,30	7,21	6,94	6,67	6,42

TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

NOTE: Data referred to **CAF368C5T**

OUTDOOR UNIT: **GRF488L7TAA**
INDOOR UNIT: **CAF488C5T**

380 - 415V 3N ~ 50Hz

RATING CAPACITY		14,10 kW		moisture removal		5 l/h		
COMP. POWER INPUT		4,502 kW		max comp input		5,902 kW		
AIR FLOW RATE		1920 m³/h						
EVAPORATOR		CONDENSER						
ENT.TEMP. °C		OUTDOOR AMBIENT TEMP. °C						
W.B.	D.B.		20	25	30	35	40	43
15		TC	14,24	13,36	12,97	12,35	11,59	10,70
		CM	2,54	3,10	3,67	4,23	4,80	5,36
	21	SHC	9,88	9,16	8,98	8,67	8,31	7,88
	23	SHC	11,17	10,38	10,18	9,87	9,50	9,07
	25	SHC	12,40	11,57	11,34	11,03	10,67	10,24
	27	SHC	13,69	12,79	12,54	12,23	11,59	10,70
	29	SHC	14,24	13,36	12,97	12,35	11,59	10,70
	31	SHC	14,24	13,36	12,97	12,35	11,59	10,70
17		TC	15,26	14,47	13,92	13,24	12,44	11,46
		CM	2,67	3,24	3,80	4,37	4,93	5,50
	21	SHC	8,52	8,01	7,79	7,48	7,11	6,65
	23	SHC	9,80	9,21	8,95	8,64	8,28	7,85
	25	SHC	11,09	10,44	10,15	9,84	9,47	9,01
	27	SHC	12,38	11,64	11,00	10,64	10,21	9,77
	29	SHC	13,66	12,87	12,51	12,20	11,83	11,37
	31	SHC	14,89	14,07	13,67	13,24	12,44	11,46
19		TC	16,22	15,33	14,81	14,10	13,24	12,20
		CM	2,81	3,37	3,94	4,50	5,07	5,63
	21	SHC	7,16	6,71	6,50	6,19	5,82	5,39
	23	SHC	8,44	7,89	7,69	7,39	7,02	6,59
	25	SHC	9,73	9,04	8,86	8,55	8,21	7,76
	27	SHC	10,95	10,21	10,05	10,60	9,38	8,95
	29	SHC	12,24	11,34	11,22	10,91	10,58	10,12
	31	SHC	13,52	12,54	12,41	12,11	11,74	11,31
21		TC	17,06	16,25	15,69	14,96	14,04	12,94
		CM	3,68	4,10	4,51	4,93	5,35	5,77
	23	SHC	7,01	6,63	6,41	6,10	5,73	5,30
	25	SHC	8,29	7,77	7,57	7,30	6,93	6,50
	27	SHC	9,57	8,94	8,77	8,46	8,12	7,66
	29	SHC	10,85	10,07	9,93	9,66	9,29	8,86
	31	SHC	12,06	11,26	11,13	10,82	10,48	10,05
23		TC	18,19	17,16	16,61	15,69	14,68	13,67
		CM	4,55	4,82	5,09	5,36	5,63	5,90
	25	SHC	6,84	6,43	6,22	5,89	5,52	5,15
	27	SHC	8,12	7,53	7,39	7,05	6,68	6,31
	29	SHC	9,40	8,67	8,58	8,25	7,88	7,51
	31	SHC	10,68	9,90	9,78	9,41	9,04	8,71

TOTAL COOLING CAPACITY kW
SHC: SENSIBLE HEAT CAPACITY kW
CM: COMPRESSOR INPUT kW

RATING CONDITIONS

Cooling: Indoor air temperature 27°C D.B. / 19°C W.B.
Outdoor air temperature 35°C D.B. / 24°C W.B.

NOTE: Data referred to **CAF488C5T**

6. ELECTRICAL DATA

6-1 Electrical characteristics

OUTDOOR UNIT: **GRF98L5TAA**

COOLING

			Indoor Unit	Outdoor unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
performance at			230V 1-Phase 50 Hz			
Rating conditions	Running Amps.	A	0,12	0,28	3,00	3,40
	Power input	Kw	0,027	0,063	0,680	0,770
Full load conditions	Running Amps.	A	0,12	0,28	3,60	4,00
	Power input	Kw	0,027	0,063	0,790	0,880

NOTE: Data referred to indoor unit **MRAF98C5T** model.
For other indoor unit models there could be some differences.

OUTDOOR UNIT: **GRF128L5TAA**

COOLING

			Indoor Unit	Outdoor unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
performance at			230V 1-Phase 50 Hz			
Rating conditions	Running Amps.	A	0,13	0,28	4,29	4,70
	Power input	Kw	0,031	0,063	0,956	1,050
Full load conditions	Running Amps.	A	0,13	0,28	5,09	5,50
	Power input	Kw	0,031	0,063	1,156	1,250

NOTE: Data referred to indoor unit **MRAF128C5T** model.
For other indoor unit models there could be some differences.

OUTDOOR UNIT: **GRF188L5TAA**

COOLING

			Indoor Unit	Outdoor unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
performance at			230V 1-Phase 50 Hz			
Rating conditions	Running Amps.	A	0,37	0,41	6,32	7,10
	Power input	Kw	0,070	0,087	1,443	1,600
Full load conditions	Running Amps.	A	0,37	0,41	7,72	8,50
	Power input	Kw	0,070	0,087	1,793	1,950

NOTE: Data referred to indoor unit **MRAF188C5T** model.
For other indoor unit models there could be some differences.

Rating Conditions: Indoor Air Temperature 27°C D.B. / 19°C W.B.
Outdoor Air Temperature 35°C D.B.

Full Load Conditions: Indoor Air Temperature 32°C D.B. / 23°C W.B.
Outdoor Air Temperature 43°C D.B.

OUTDOOR UNIT: **GRF188L7TAA**

COOLING

			Indoor Unit	Outdoor unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
performance at			230V 1-Phase 50 Hz			
Rating conditions	Running Amps.	A	0,37	0,41	2,62	3,40
	Power input	Kw	0,070	0,087	1,493	1,650
Full load conditions	Running Amps.	A	0,37	0,41	3,32	4,10
	Power input	Kw	0,070	0,087	1,943	2,100

NOTE: Data referred to indoor unit **MPAF188C5T** model.
For other indoor unit models there could be some differences.

OUTDOOR UNIT: **GRF228L7TAA**

COOLING

			Indoor Unit	Outdoor unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
performance at			230V 1-Phase 50 Hz			
Rating conditions	Running Amps.	A	0,40	0,67	3,13	4,20
	Power input	Kw	0,086	0,144	1,850	2,080
Full load conditions	Running Amps.	A	0,40	0,67	3,93	5,00
	Power input	Kw	0,086	0,144	2,370	2,600

NOTE: Data referred to indoor unit **MPAF228C5T** model.
For other indoor unit models there could be some differences.

OUTDOOR UNIT: **GRF258L7TAA**

COOLING

			Indoor Unit	Outdoor unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
performance at			230V 1-Phase 50 Hz			
Rating conditions	Running Amps.	A	0,77	0,67	3,66	5,10
	Power input	Kw	0,175	0,144	2,261	2,580
Full load conditions	Running Amps.	A	0,77	0,67	4,76	6,20
	Power input	Kw	0,175	0,144	3,081	3,400

NOTE: Data referred to indoor unit **CAF258C5T** model.
For other indoor unit models there could be some differences.

Rating Conditions: Indoor Air Temperature 27°C D.B. / 19°C W.B.
Outdoor Air Temperature 35°C D.B.

Full Load Conditions: Indoor Air Temperature 32°C D.B. / 23°C W.B.
Outdoor Air Temperature 43°C D.B.

OUTDOOR UNIT: **GRF368L7TAA**

COOLING

			Indoor Unit	Outdoor unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
performance at			230V 1-Phase 50 Hz			
Rating conditions	Running Amps.	A	0,92	1,34	4,34	6,60
	Power input	Kw	0,210	0,29	2,802	3,300
Full load conditions	Running Amps.	A	0,92	1,34	5,14	7,40
	Power input	Kw	0,210	0,29	3,402	3,900

NOTE: Data referred to indoor unit **CAF368C5T** model.
For other indoor unit models there could be some differences.

OUTDOOR UNIT: **GRF488L7TAA**

COOLING

			Indoor Unit	Outdoor unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
performance at			230V 1-Phase 50 Hz			
Rating conditions	Running Amps.	A	0,92	1,34	7,44	9,70
	Power input	Kw	0,210	0,29	4,502	5,000
Full load conditions	Running Amps.	A	0,92	1,34	9,34	11,60
	Power input	Kw	0,210	0,29	5,902	6,400

NOTE: Data referred to indoor unit **CAF488C5T** model.
For other indoor unit models there could be some differences.

Rating Conditions: Indoor Air Temperature 27°C D.B. / 19°C W.B.
Outdoor Air Temperature 35°C D.B.

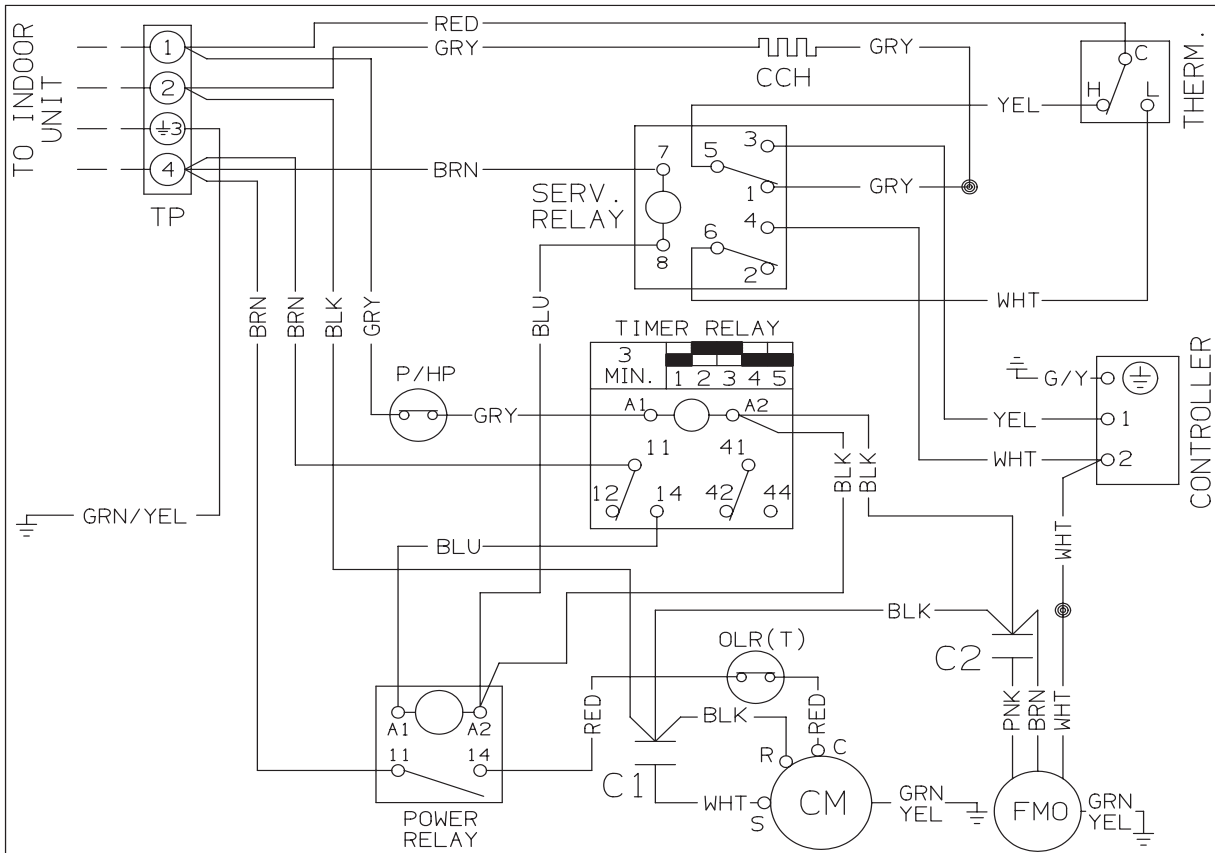
Full Load Conditions: Indoor Air Temperature 32°C D.B. / 23°C W.B.
Outdoor Air Temperature 43°C D.B.

6-2 Electric Wiring Diagram

GRF98L5TAA GRF128L5TAA

ELECTRIC WIRING DIAGRAM

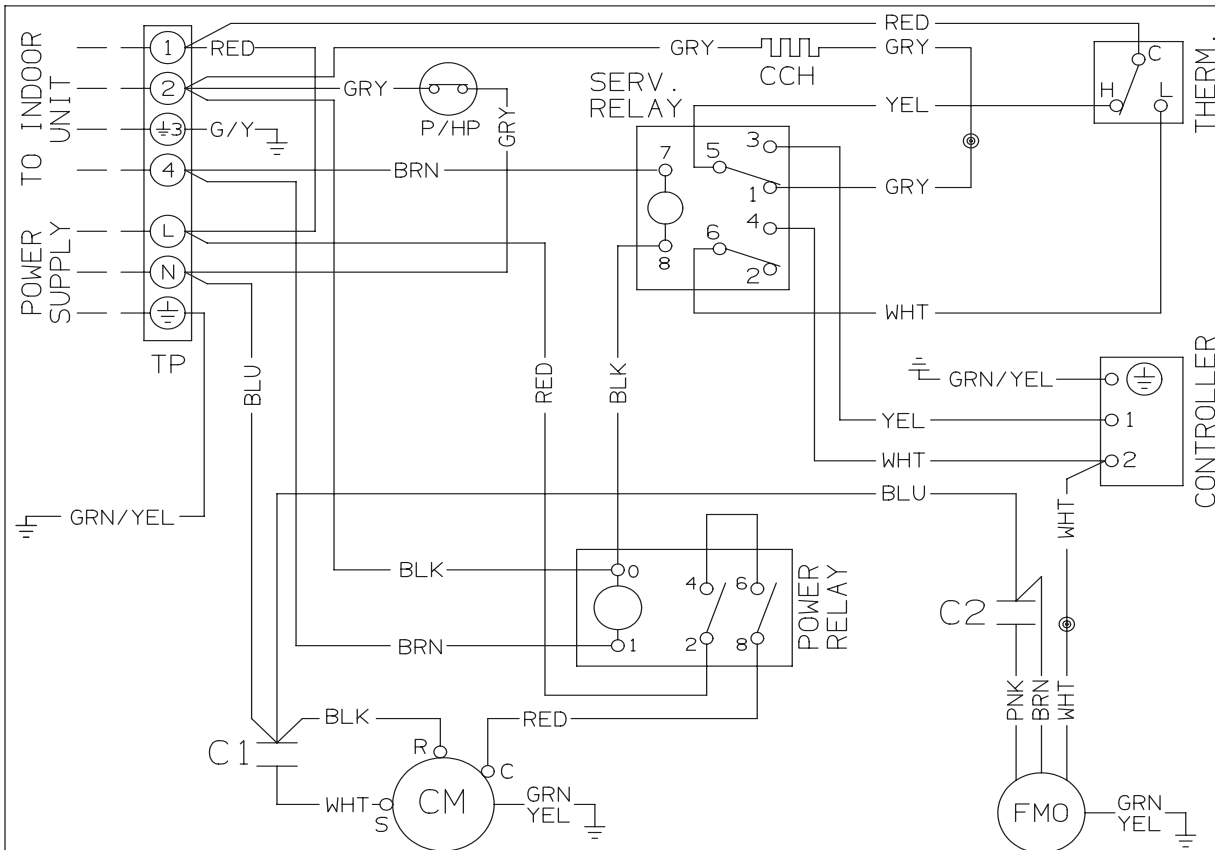
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GRF188L5TAA

ELECTRIC WIRING DIAGRAM

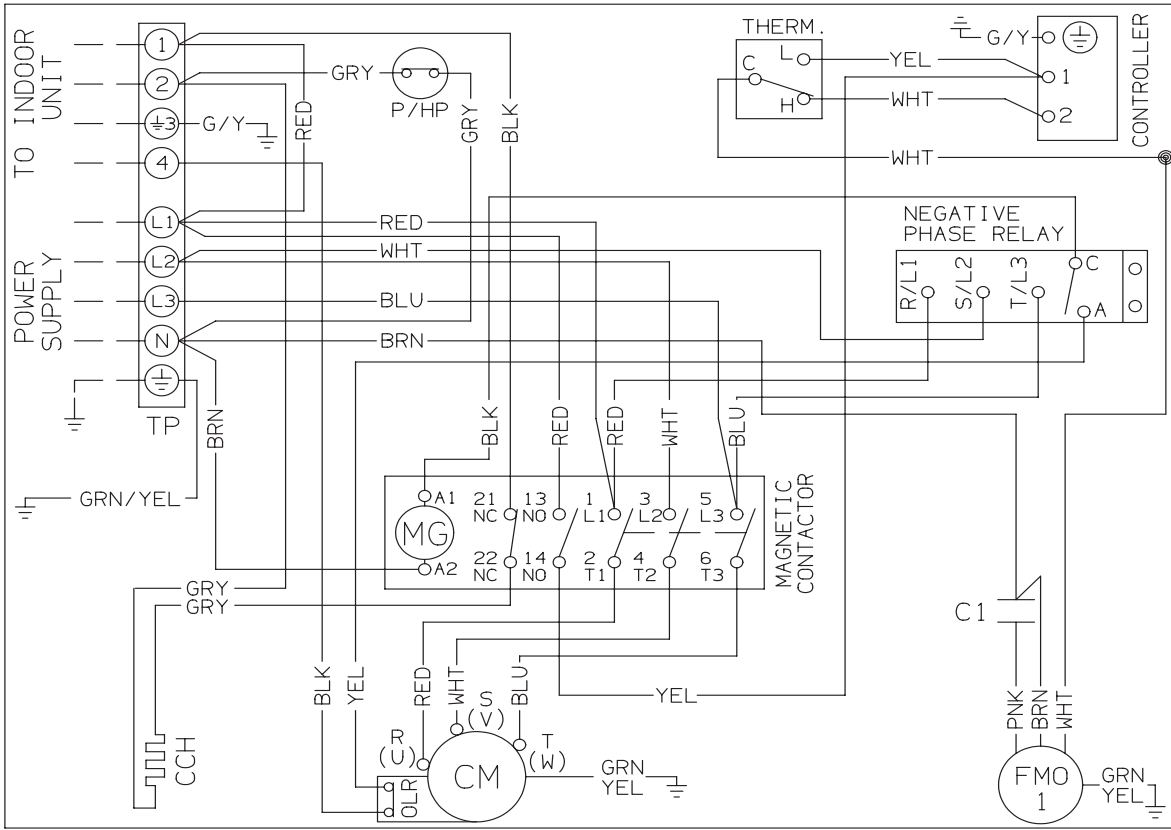
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GRF188L7TAA

ELECTRIC WIRING DIAGRAM

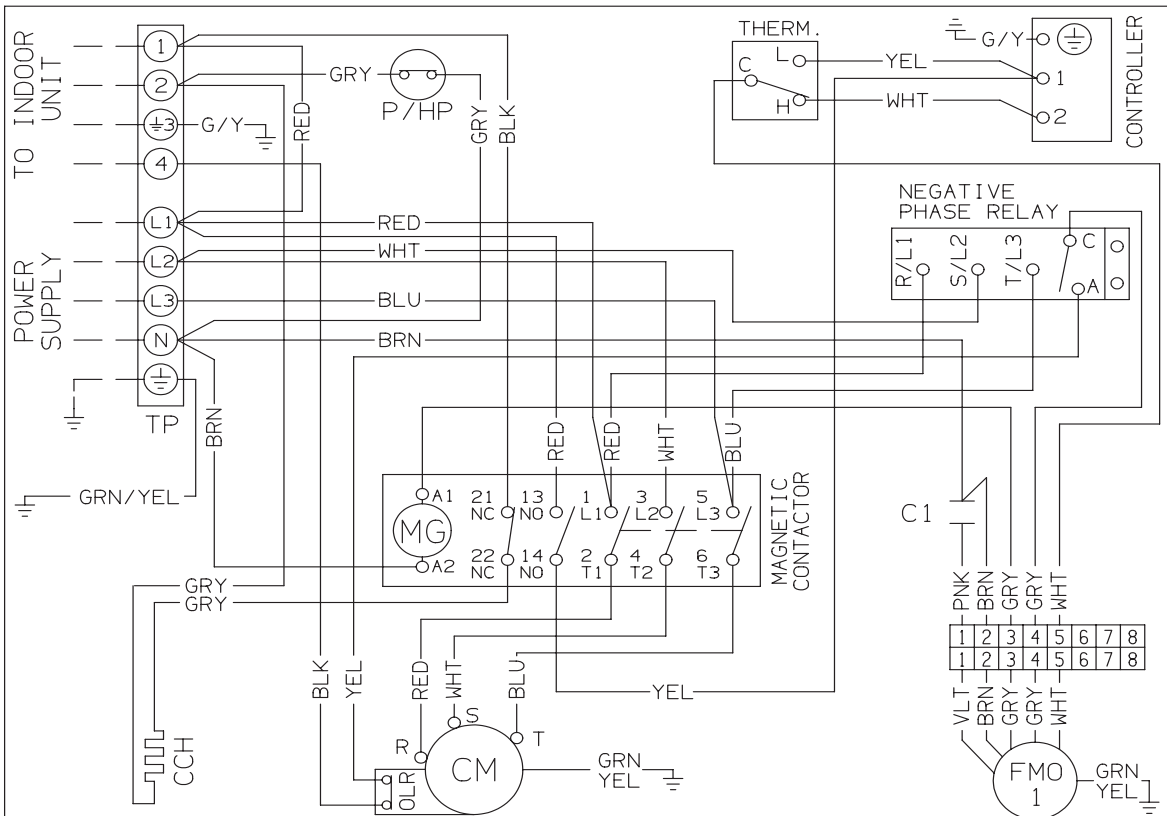
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GRF228L7TAA

ELECTRIC WIRING DIAGRAM

37-3159-005-00



ELECTRIC WIRING DIAGRAM

[illegible]

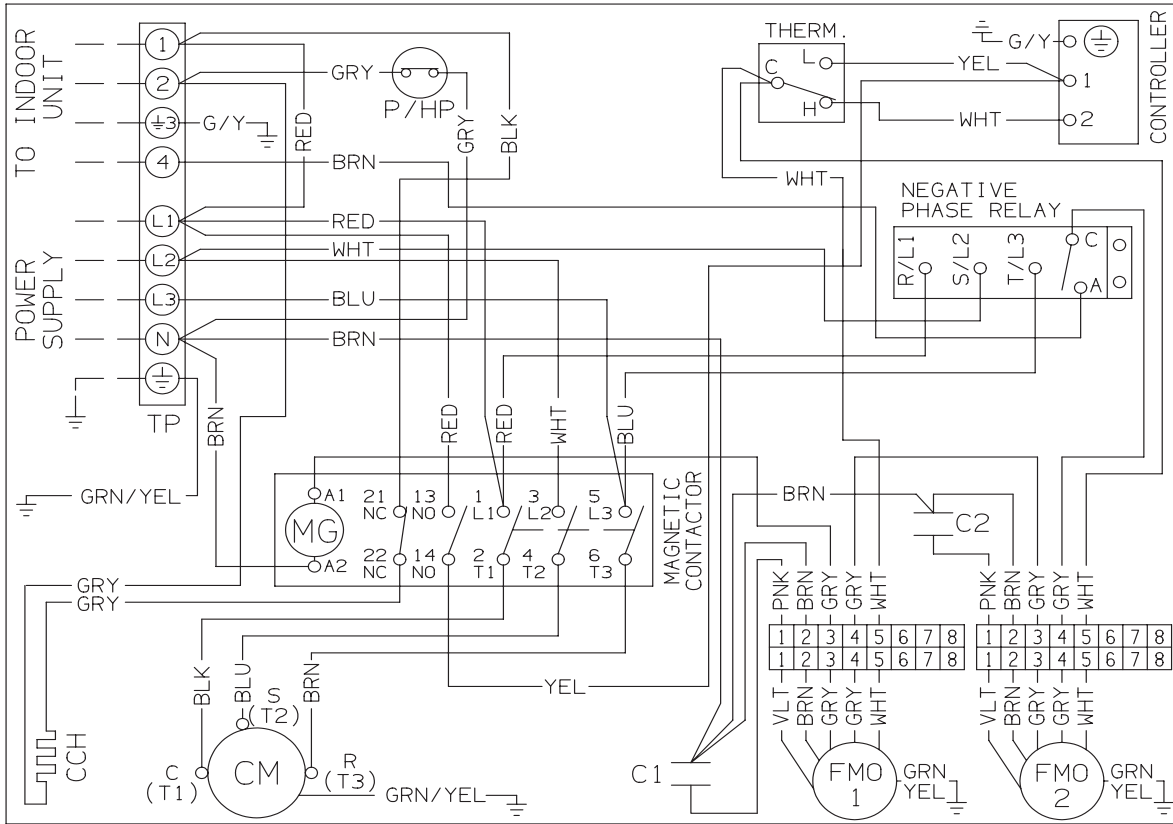
ELECTRIC WIRING DIAGRAM

This diagram illustrates the electrical connections for a three-phase indoor unit. The power supply (L1, L2, L3, N, TP) is connected to the indoor unit terminals. The wiring includes a magnetic contactor (MG) with terminals 1L1, 2T1, 3L2, 4T2, 5L3, and 6T3. A negative phase relay (R/L1, S/L2, T/L3, C, OA) is connected to the power supply and the magnetic contactor. The indoor unit is connected to the outdoor unit (CCH) via a three-phase cable (BLK, BLU, BRN). The diagram also shows the connection of a thermistor (THERM.) and a pressure/temperature switch (P/HP) to the indoor unit. The outdoor unit is connected to the indoor unit via a three-phase cable (BLK, BLU, BRN) and a common ground (GRN/YEL). The outdoor unit is also connected to a common ground (GRN/YEL) and a common ground (GRN/YEL).

GRF488L7TAA

ELECTRIC WIRING DIAGRAM

37-3159-018-00



6-3 System Wiring Diagram

MRAF98C5T

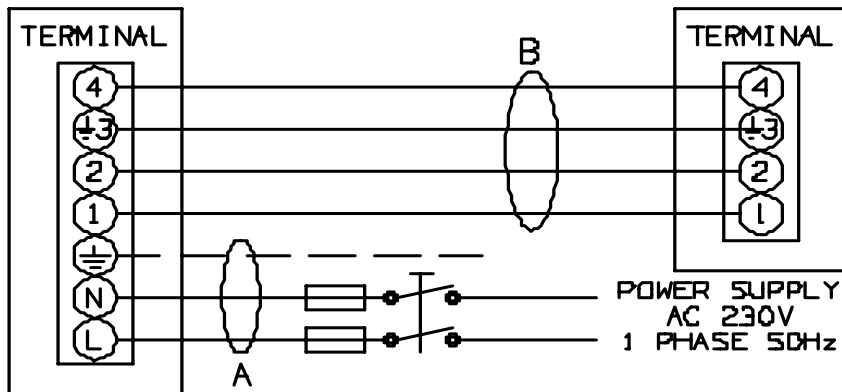
MRAF128C5T

GRF98L5TAA

GRF128L5TAA

INDOOR UNIT

OUTDOOR UNIT

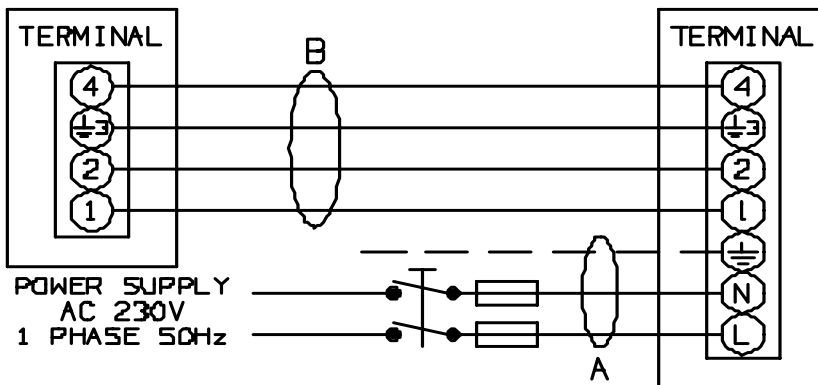


MPAF188C5T

GRF188L5TAA

INDOOR UNIT

OUTDOOR UNIT



MPAF188C5T

CAF258C5T

GRF188L7TAA

GRF258L7TAA

MPAF228C5T

CAF368C5T

GRF228L7TAA

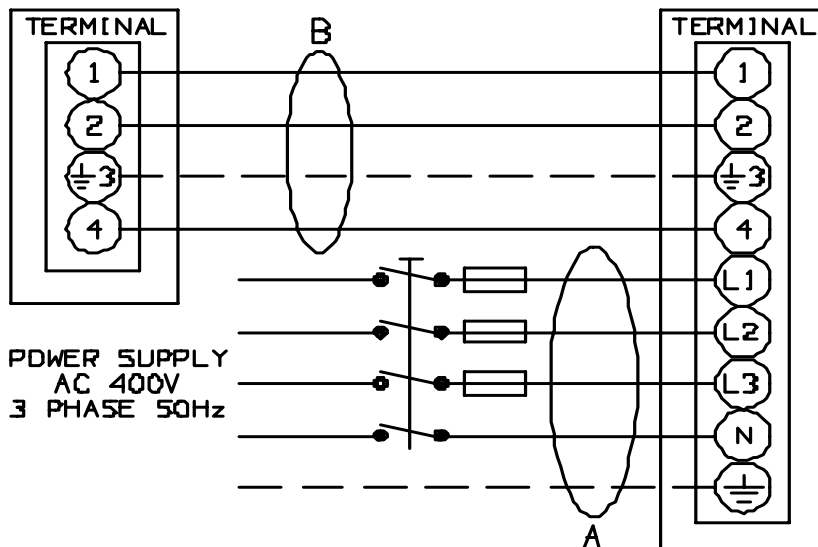
GRF368L7TAA

CAF488C5T

GRF488L7TAA

INDOOR UNIT

OUTDOOR UNIT





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