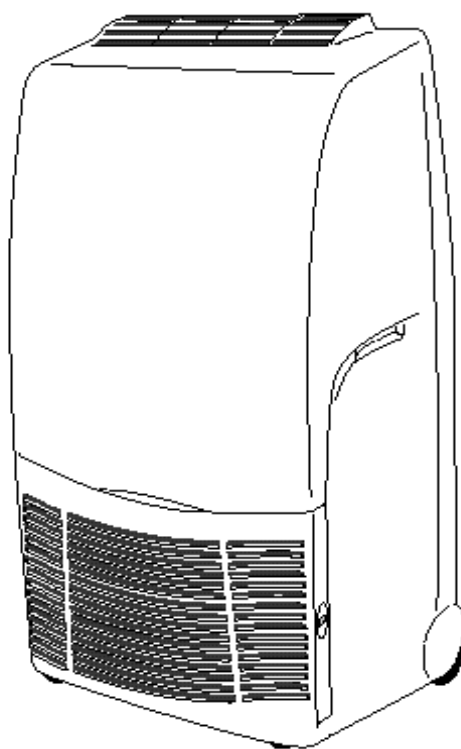


# *Euro-Line*®

## TECHNICAL DATA & SERVICE MANUAL



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# 1. SPECIFICATIONS

## 1-1 Unit Specifications

<b>Power source</b>	220 - 240 V ~ 50 Hz
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<b>Voltage rating</b>	230 V
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<b>Performance</b>				<b>COOLING</b>	<b>DEHUMIDIFICATION</b>
				WITH AIR EXHAUSTING TUBE	WITHOUT AIR EXHAUSTING TUBE
Capacity (1)	(1)	W	2100	-	
Efficiency (2)	(2)	W/W	2,75		
Air flow rate (evaporator)		Hi/Lo m <sup>3</sup> /h	310 / 260	260	
Air flow rate (condenser)		Hi/Lo m <sup>3</sup> /h	290 / 240	240	
Moisture removal		l/h	1	-	
Moisture removal	(3)	l/24h	-	23	
Moisture removal	(4)	l/24h	-	42	

<b>Electrical ratings</b>					
Available voltage range		V	198 - 264		
Power input		W	700	-	
Running amperes		A	3,3	-	
Power input	(3)	W	-	710	
Running amperes	(3)	A	-	3,2	
Power input	(4)	W	-	770	
Running amperes	(4)	A	-	3,5	
Compressor locked rotor		A	13		

<b>Features</b>					
Controls/Temperature controls	Microprocessor / I.C. Thermostat				
Control unit	Switches on the unit				
Timer	-				
Fan speed			2	1	
Air Filter	Washable				
Operation sound Lp	(5)	Hi/Lo	dB(A)		55 / 51
Compressor	Rotary (hermetic)				
Refrigerant / Amount charged at shipment			g		
Refrigerant control	Capillary tube				
Water tank capacity			liters		
Flexible exhaust tube	I.D.	mm		115	
	extended length	m		1	
Hole in the window			mm		
Electric cable with plug	length	m		2,9	

<b>Dimensions &amp; Weight</b>					
Unit dimensions	Height	mm		870	
	Width	mm		476	
	Depth	mm		390	
Package dimensions	Height	mm		1110	
	Width	mm		577	
	Depth	mm		483	
	Volume	m <sup>3</sup>		0,31	
Weight	Net	kg		32	
	Shipping	kg		41	

Data subject to change without notice

### Rating conditions

- (1) Cooling indoor air temperature: 27 °C d.b. , 19 °C w.b.  
 (2) Cooling indoor air temperature: 35 °C d.b. , 24 °C w.b.  
 (3) Dehumidification indoor air temperature: 27 °C d.b. , 21 °C w.b , 60% u.r.  
 (4) Dehumidification indoor air temperature: 30 °C d.b. , 27 °C w.b , 80% u.r.  
 (5) Reference data: room size 100 m<sup>3</sup> , reverberation time 0,5 s , distance 2 m

Operating limits	maximum		minimum	
	Indoor air temperature	Cooling	35 °C d.b. , 24 °C w.b	15 °C d.b. , 12 °C w.b
	Dehumidification	35 °C d.b. , 28 °C w.b	10 °C d.b. , 6,5 °C w.b	

## 1-2 Major Component Specifications

Controller PCB			(CE)	RY2	
Controls	setting	°C		15 ± 1,5 ÷ 31 ± 2	
	differential	°C		0,9 ± 0,2	
Starting delay time				3 min ± 10 s	
Function selection and indicator lamp				ON / OFF	
				COOLING / FAN	
				HIGH / LOW FAN	
Trasformer			capacity	VA	1,5
			primary	V	220
			secondary	V	10,5
			coil resistance primary (20°C)	Ω	2754 ± 10%
			coil resistance secondary (20°C)	Ω	17,1 ± 10%

Thermistor (coil sensor)			(TH1)	NTC
	open	°C		1 ± 1
	close	°C		6 ± 1
Resistance		Ω		-20 °C: 5846 ± 5% ; 20 °C: 604 ± 5%
		Ω		-10 °C: 3159 ± 5% ; 30 °C: 368 ± 5%
		Ω		0 °C: 1766 ± 5% ; 40 °C: 230 ± 5%
		Ω		10 °C: 1018 ± 5% ; 50 °C: 147 ± 5%

Thermistor (room sensor)			(TH2)	NTC
Resistance		Ω		10 °C: 1018 ± 5% ; 30 °C: 368 ± 5%
		Ω		15 °C: 781 ± 5% ; 35 °C: 290 ± 5%
		Ω		20 °C: 604 ± 5% ; 40 °C: 230 ± 5%
		Ω		25 °C: 470 ± 5% ; 50 °C: 147 ± 5%

Fan & Fan Motor			(FM)	M01974		
Type				Centrifugal blower		
Q'ty ..... Dia. and lenght			mm	1.... Ø 170 / L 156		
No. Of poles				4		
Rpm			Hi / Lo speed	1275 / 1058 with flexible exhaust tube retracted		
Power input (230 V)			W (Hi / Lo)	109 / 80		
Coil resistance (25°C )				GREY-WHITE: 87,3 ÷ 101		
				WHITE-VIOLET: 36,2 ÷ 41,6		
				VIOLET-YELLOW: 22,8 ÷ 26,3		
				YELLOW-PINK: 22,8 ÷ 26,3		
				GREY-BROWN: 51,9 ÷ 59,6		
Safety devices			type	Thermostat		
			operating temp.	open	°C	150 ± 10
				close	°C	Automatic
Run capacitor			(C1)			
				μF	3	
				VAC	450	

Float microswitch			(MS)	CROUZET F83161.3
Contact rating				16(4) A - 250 VAC
			up	open
			down	close

Power relay (compressor)			(PR)	OMRON G4F
Contact rating				20 A - 250 V
Coil supply			VDC	12
Coil resistance (20 °C)			Ω	158 ± 10%

Compressor			(CM)	Rotary (hermetic)	
Model				5RS080EAA (R410A)	
Nominal input (230 V)			W	675	
Compressor oil			cc	300	
Coil resistance ( 20°C)			C - R	Ω	5,19 ± 7%
			C - S	Ω	5,56 ± 7%

Data subject to change without notice

Safety devices		(OLR)	EXTERNAL TYPE
Type			MRA99137 - 9201
Operating temperature	open	°C	145 ± 5 °C
	close	°C	69 ± 9 °C
Operating amperes (25 °C)	open with		14 A in 6 ÷ 16 s

Run capacitor (compressor)		(C3)	
		µF	20
		VAC	450

Condensate pump		(PC)	
Model			291036
Nominal input (230 V)		W	5
Winding resistance		Ω	778 ± 8%

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

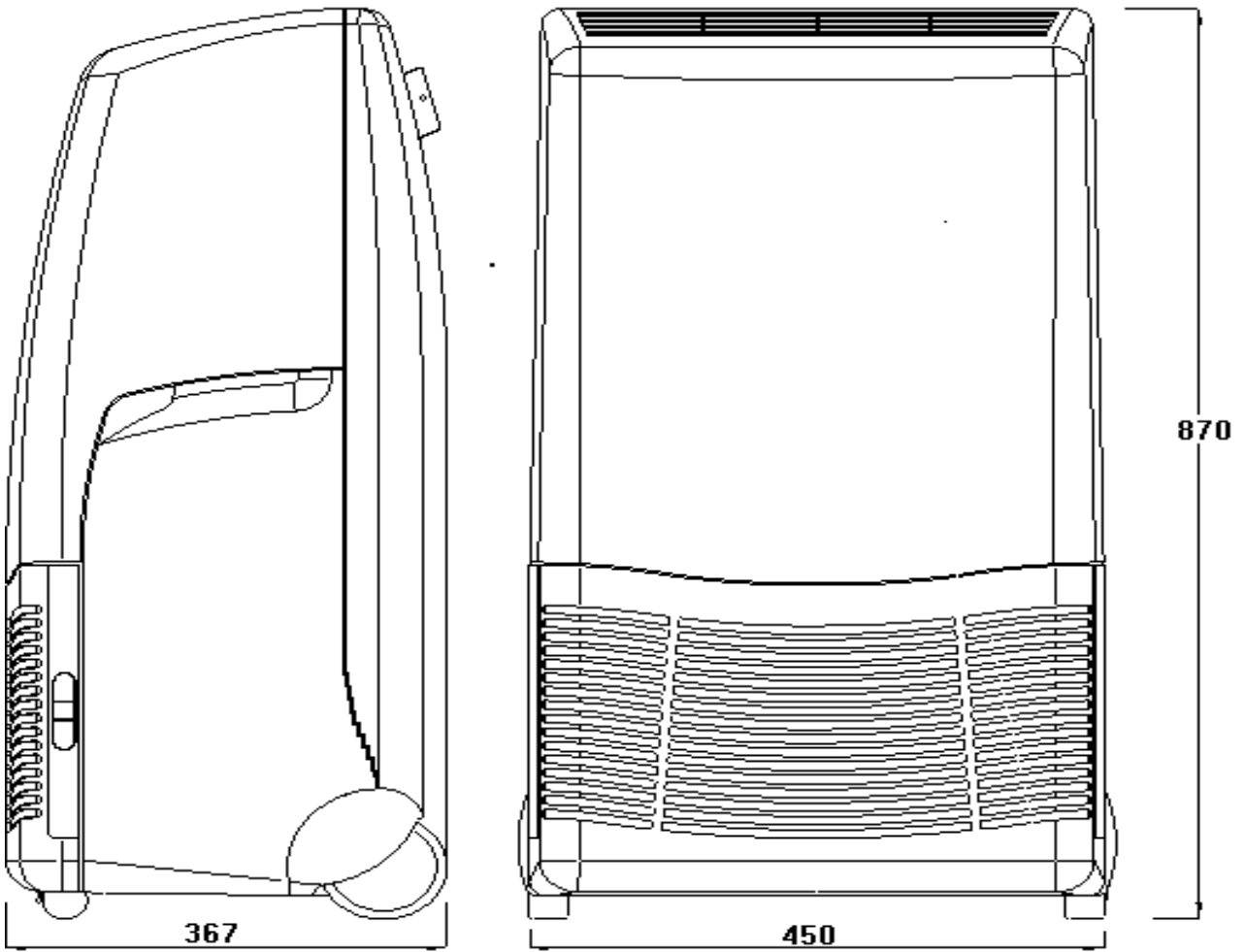
Heat exchanger coil		EVAPORATOR COIL	
Coils		Aluminium fin - 3/8" Copper tube	
Rows		4	
Fin pitch	mm	1,8	
Face area	m <sup>2</sup>	0,042	

Heat exchanger coil		CONDENSER COIL	
Coils		Aluminium fin - 7mm Copper tube	
Rows		5	
Fin pitch	mm	1,3	
Face area	m <sup>2</sup>	0,084	

Data subject to change without notice

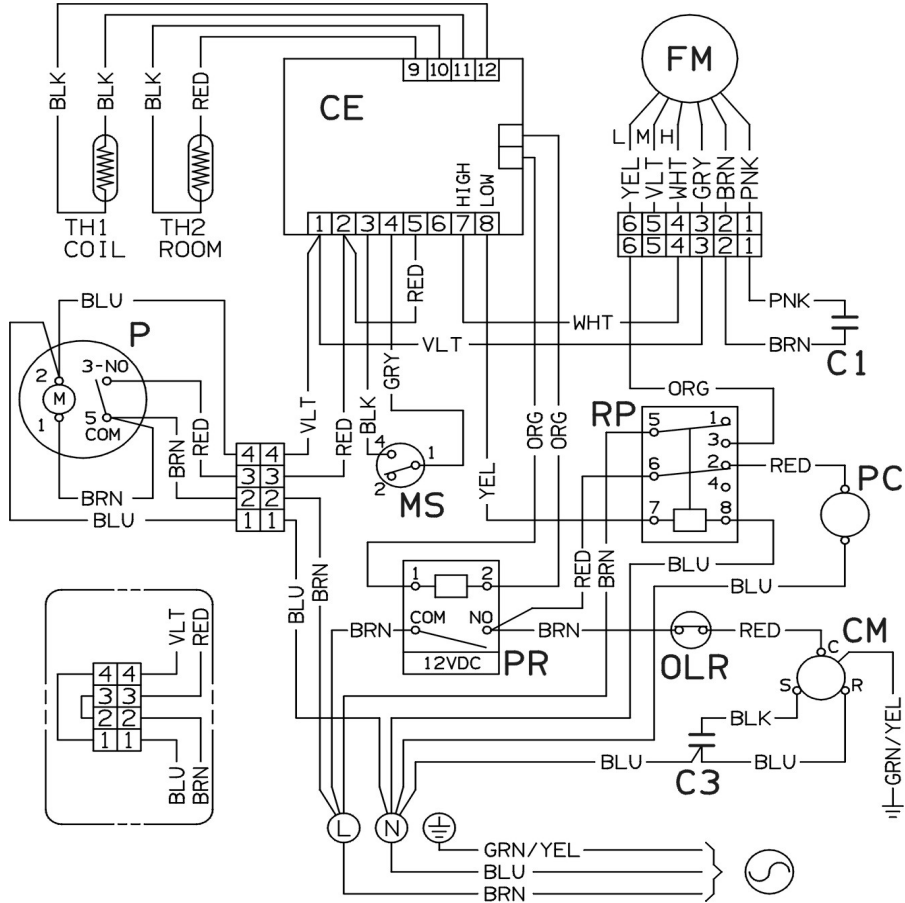
## 2. DIMENSIONAL DATA

### 2-1 Unit Dimensions



# 3. ELECTRICAL DATA

## 3-1 Electric Wiring Diagram



- COMPRESSOR
- CAPACITOR
- ELECTRIC HEATER
- FAN MOTOR
- OVERLOAD PROTECTOR
- ELECTRONIC CONTROL
- COMPRESSOR RELAY
- CONDENSATE PUMP
- PUMP RELAY
- DEHUMIDIFIER SWITCH
- FLOAT MICROSWITCH
- ELECTRIC HEATER RELAY
- SENSOR
- THERMOFUSE
- SAFETY THERMOSTAT
- PROGRAMMER

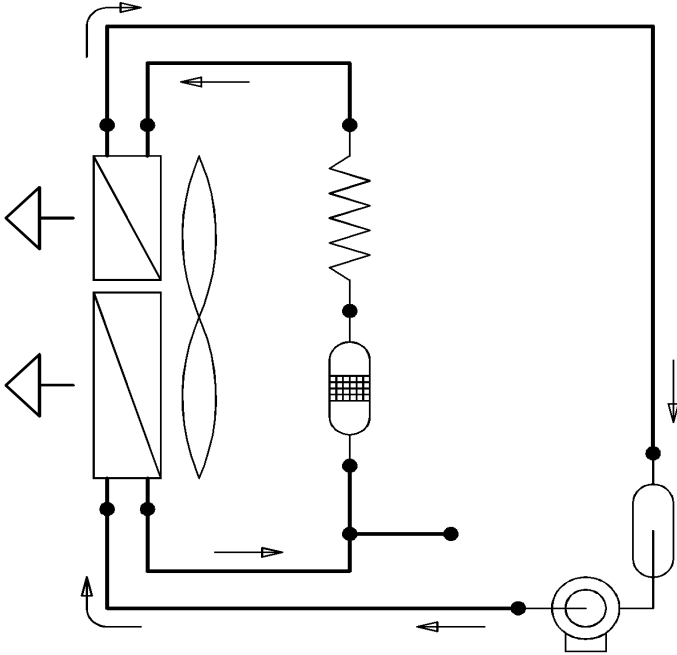
- CM/C
- Cx
- RE
- FMI/MV
- OLR/K
- CE
- PR/RC
- PC
- RP
- ID
- MS
- RR
- TH1/S
- TF
- TS
- P

### Legend of colors

- |              |         |
|--------------|---------|
| BLACK        | BLK     |
| BLUE         | BLU     |
| BROWN        | BRN     |
| GREEN/YELLOW | GRN/YEL |
| ORANGE       | ORG     |
| RED          | RED     |
| WHITE        | WHT     |
| YELLOW       | YEL     |
| GREEN        | GRN     |
| PINK         | PNK     |

# 4. REFRIGERANT FLOW DATA

## 4-1 Refrigerant flow diagram

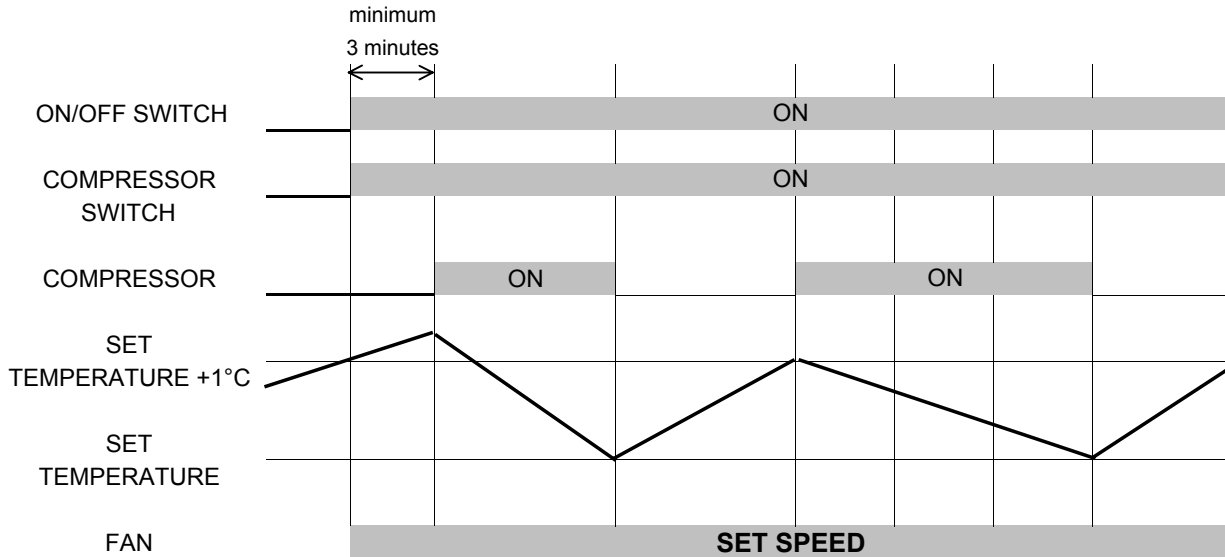




# 5. FUNCTION

## 5-1 Room Temperature Control

Room temperature control is obtained by cycling the compressor ON and OFF by means of room temperature sensor TH1

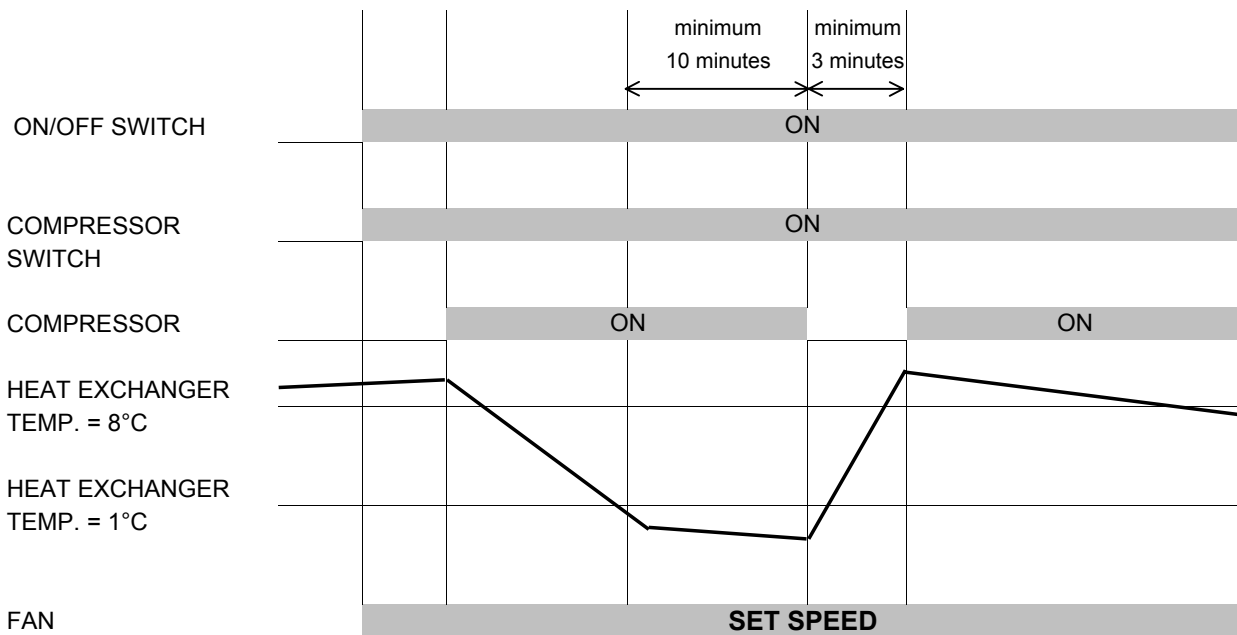


### NOTES

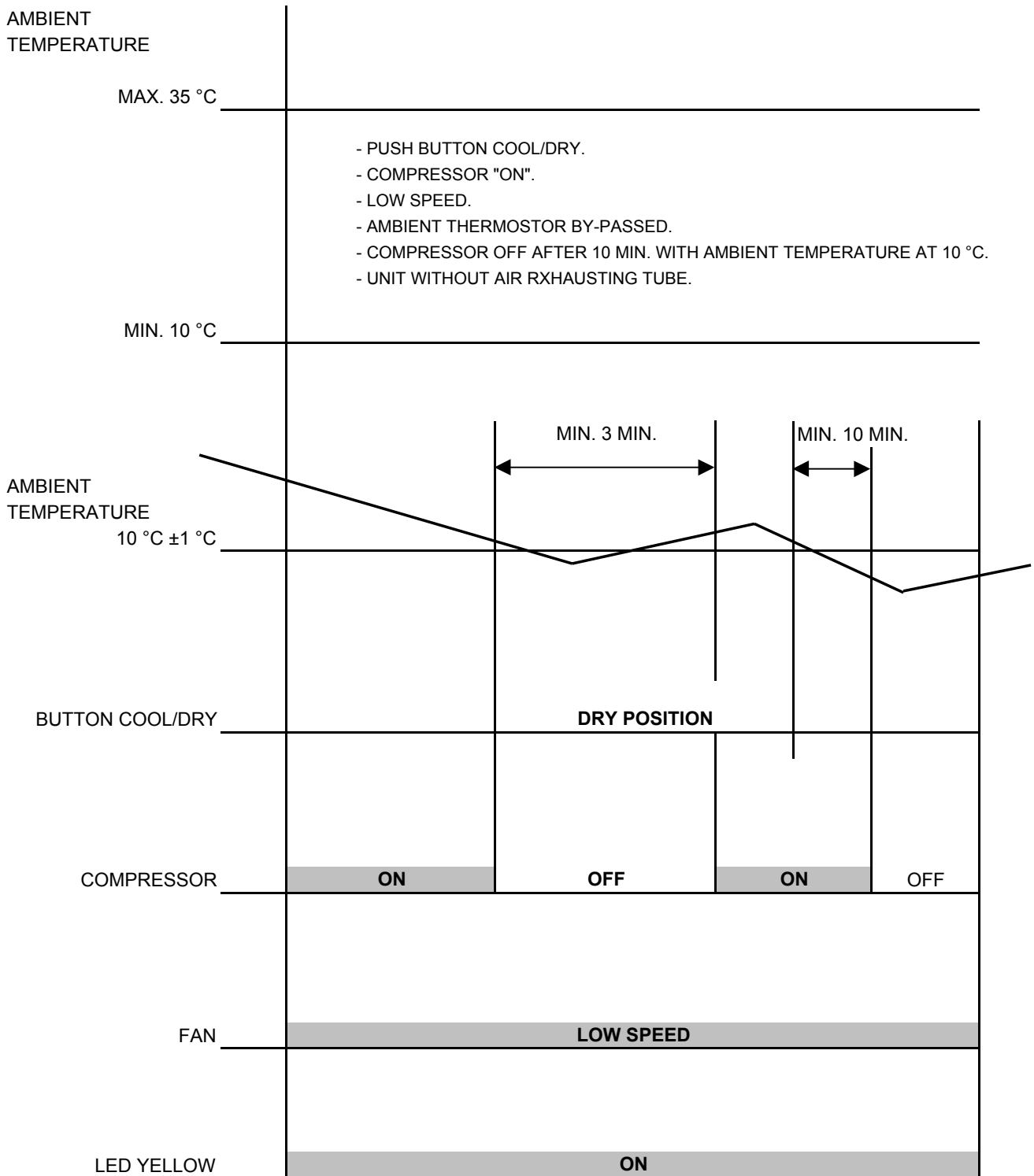
1. If the compressor is turned off, the control circuit sets an automatic minimum 3 minutes delay to protect the compressor from stalling out when trying to start against the high side refrigerant pressure.
2. If the room temperature is 1°C above the set temperature, the compressor starts working if this has been OFF for at least 3 minutes.
3. If the room temperature is the same or under the set temperature the compressor stops working.

## 5-2 Heat Exchanger Frosting Prevention

The electronic control stops automatically the compressor each time the coil sensor TH1 reaches a temperature of 1 °C for 8÷10 minutes long, the compressor starts again automatically when the temperature of heat exchanger reaches 8 °C. the fan goes "ON" working at the set speed.



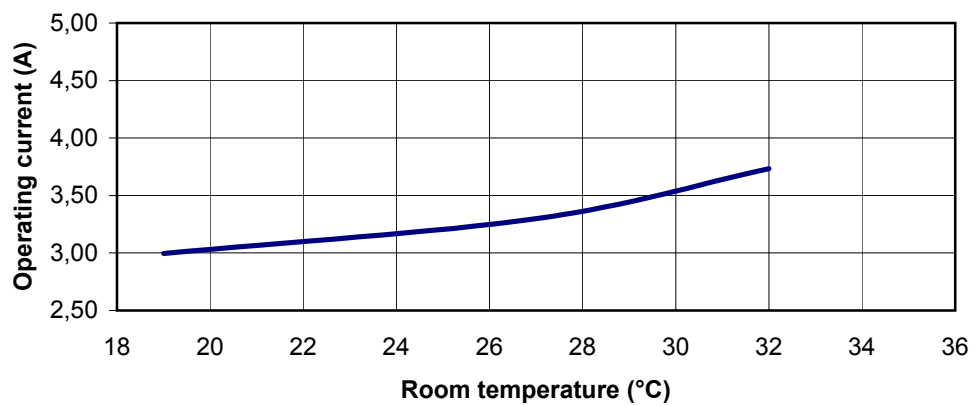
### 5-3 Dry Operation (Dehumidification)



## 6. PERFORMANCE DATA

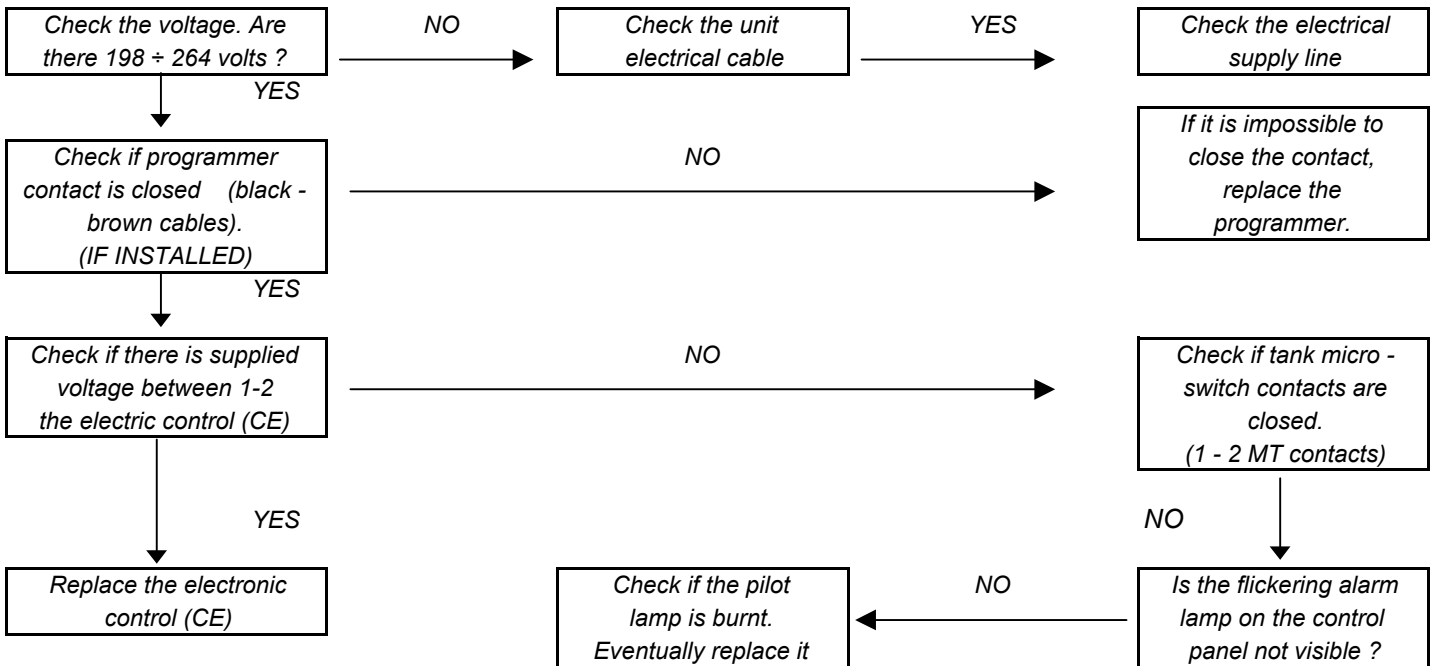
### 6-1 Performance Chart

Operating characteristics with relative humidity around 50%

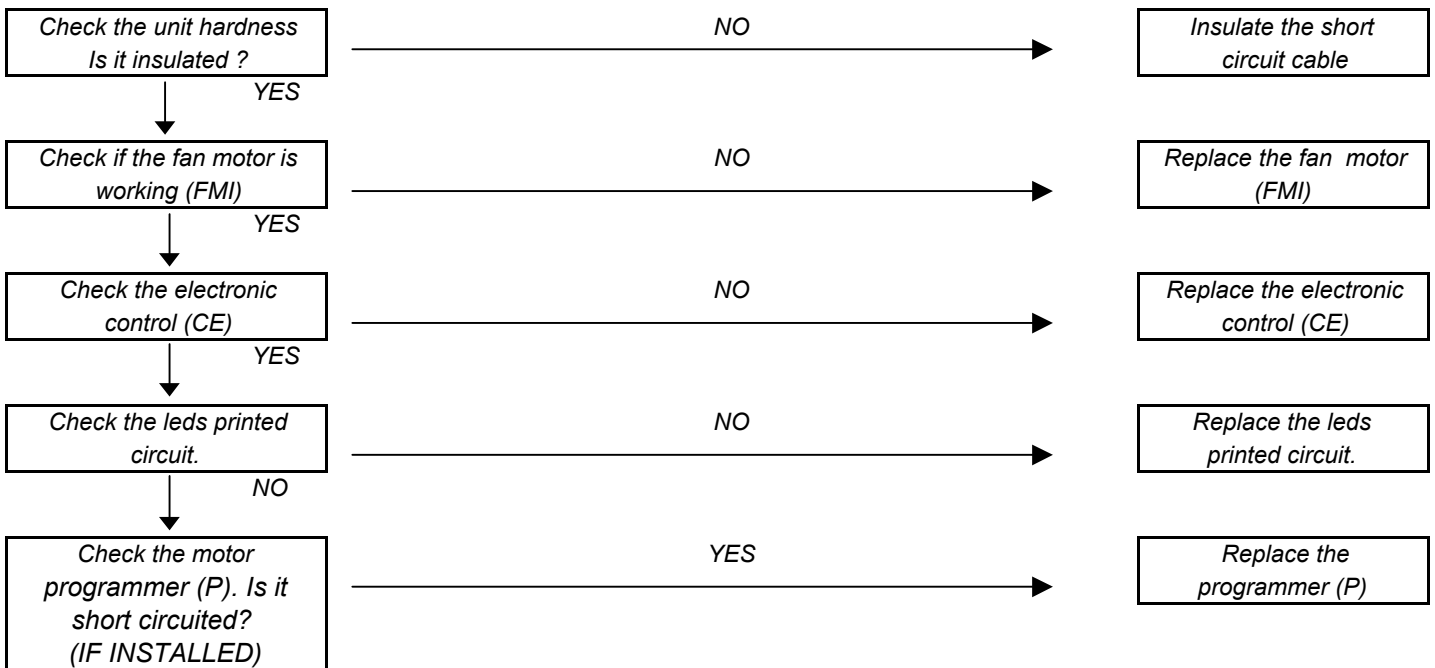


# 7. TROUBLESHOOTING

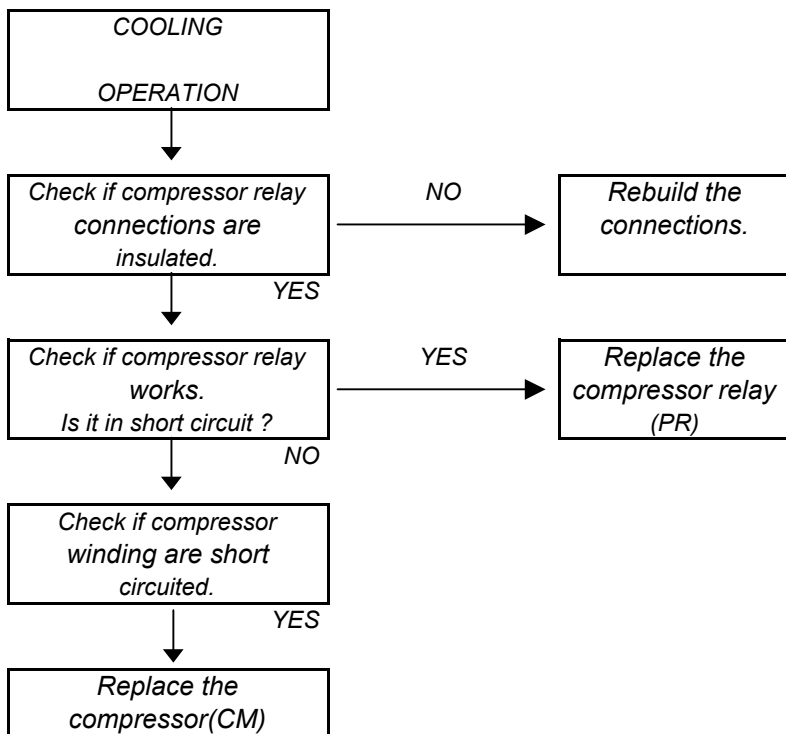
## 7-1 The unit does not work



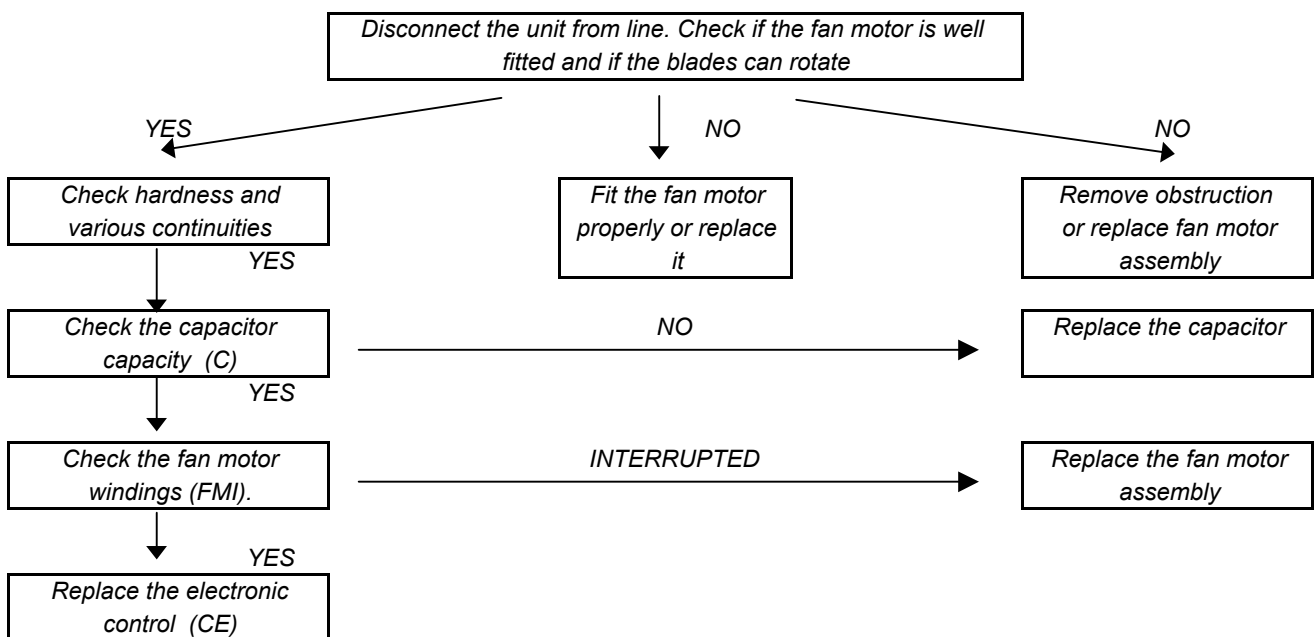
## 7-2 Electrical circuit interrupted after "ON" button is pressed



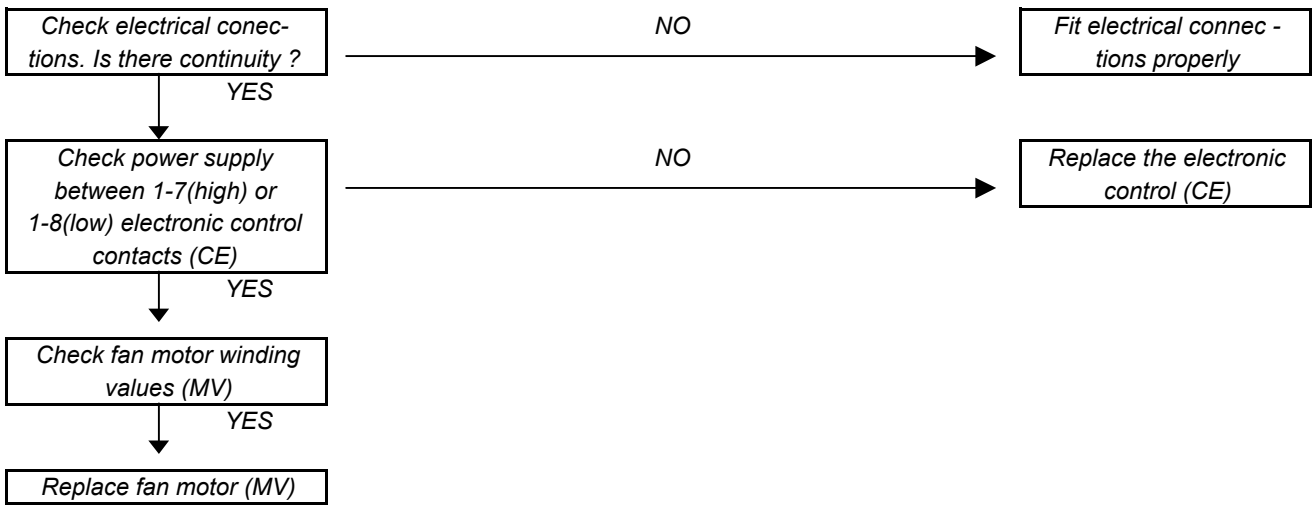
### 7-3 Electric circuit interrupted 3 minutes after "ON" button is pressed



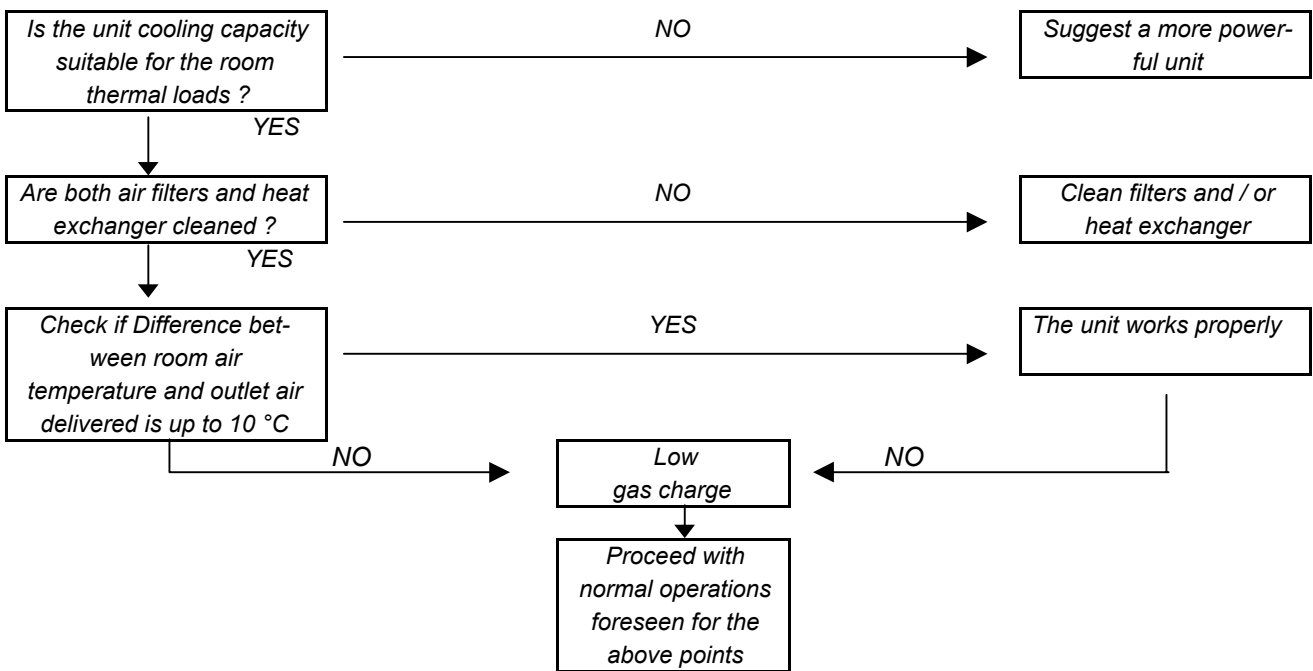
### 7-4 Fan motor does not work while "ON" button is pressed



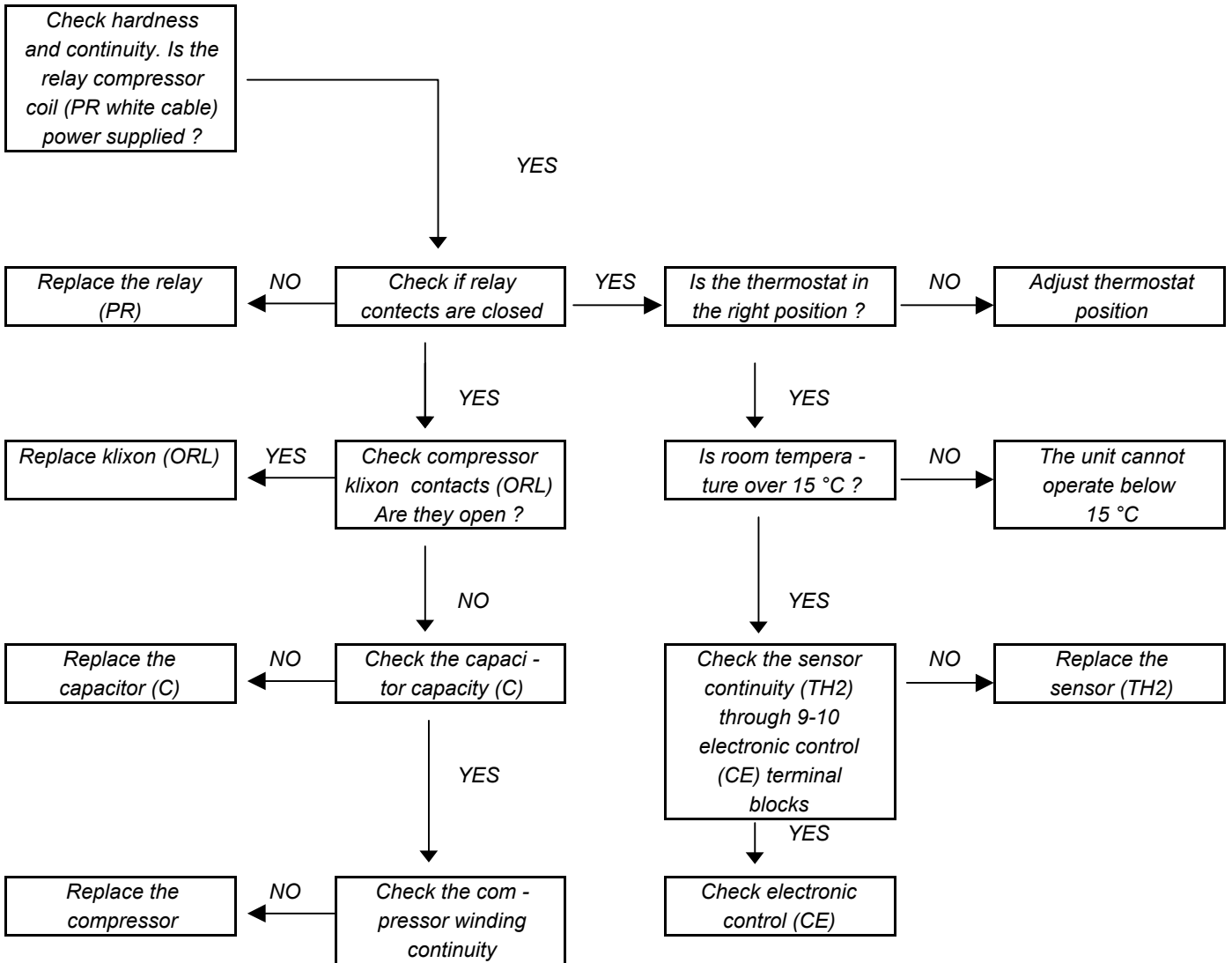
### 7-5 Fan works at one speed only



### 7-6 Poor cooling



## 7-7 Fan motor works normally but the compressor does not operate



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