The Samurai Range

HITACHI
Inspire the Next

Service Manual

Maintenance Instructions.

AIR COOLED WATER CHILLERS -SCREW TYPE-

RCUE40AG1-400AG1 (R407C)
Cooling Capacity 108 kW - 1068 kW

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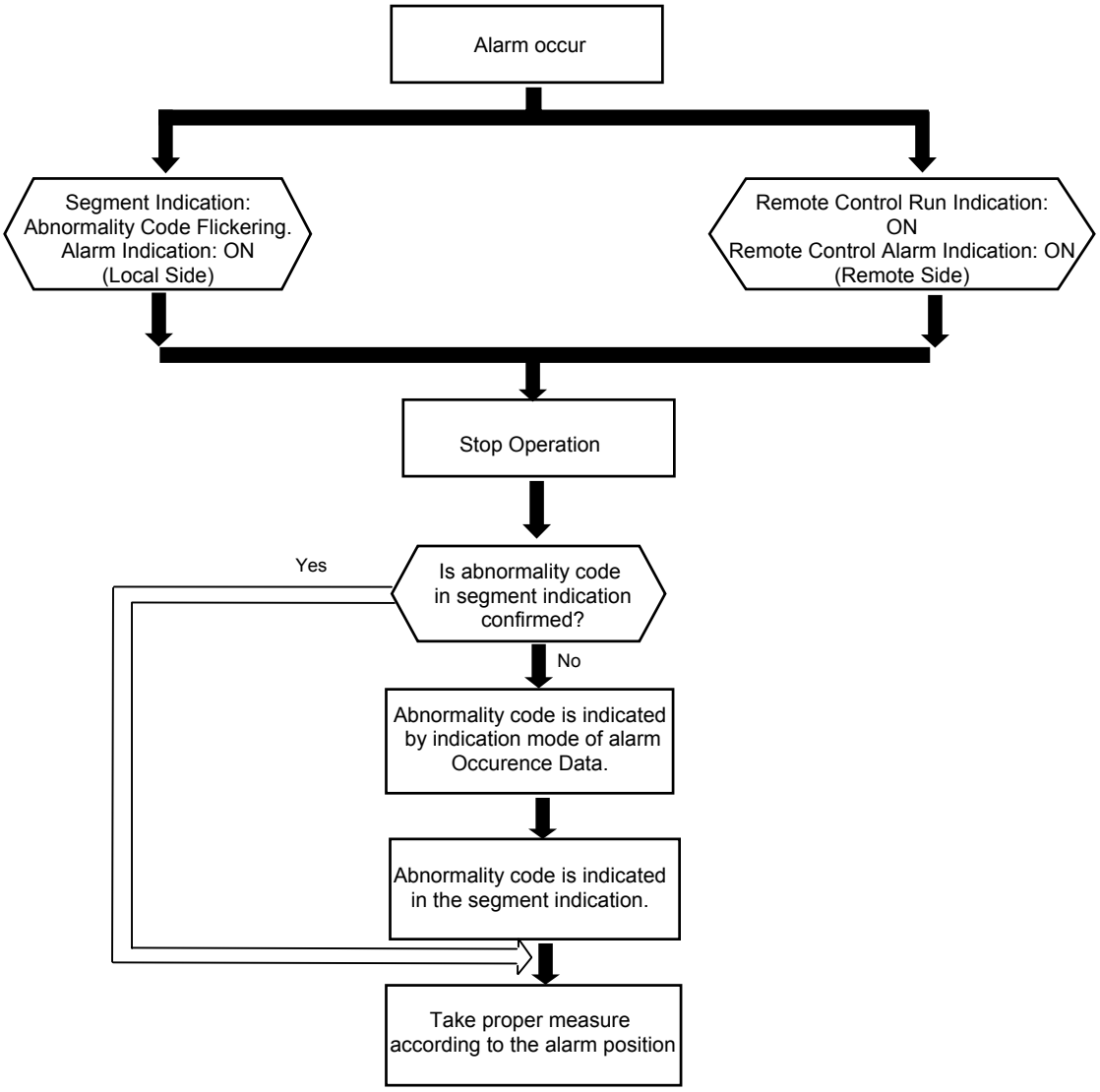
1 TROUBLESHOOTING

1.1. OUTLINE OF FAILURE DIAGNOSIS

In the case of abnormality, alarm lamp of remote control and alarm LED on the control panel are ON. And segment indication on the control panel is flickering. For stopping the unit, put it into stop operation without power OFF.

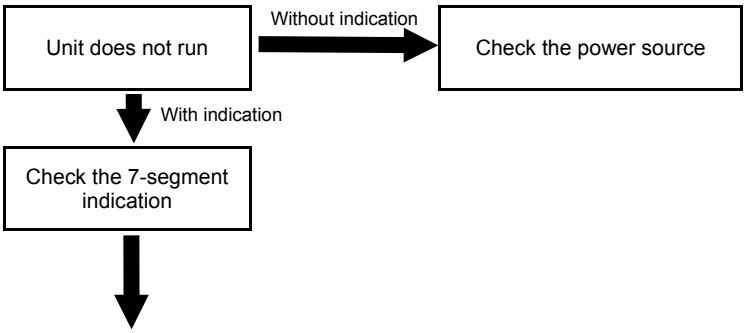


NOTE:

- *After the stop operation, alarm indication is turned off and initial status 88 is displayed. And then abnormality code, which activated before is indicated by "Indication Mode of Alarm Occurrence Data".*
- *When the power turns off and turns on, the indication is initial status. And then abnormal code, which activated before is indicated by "Indication Mode of Alarm Occurrence Data"*

1.2. ALARM INDICATION

7-Segment indication shows the following abnormalities



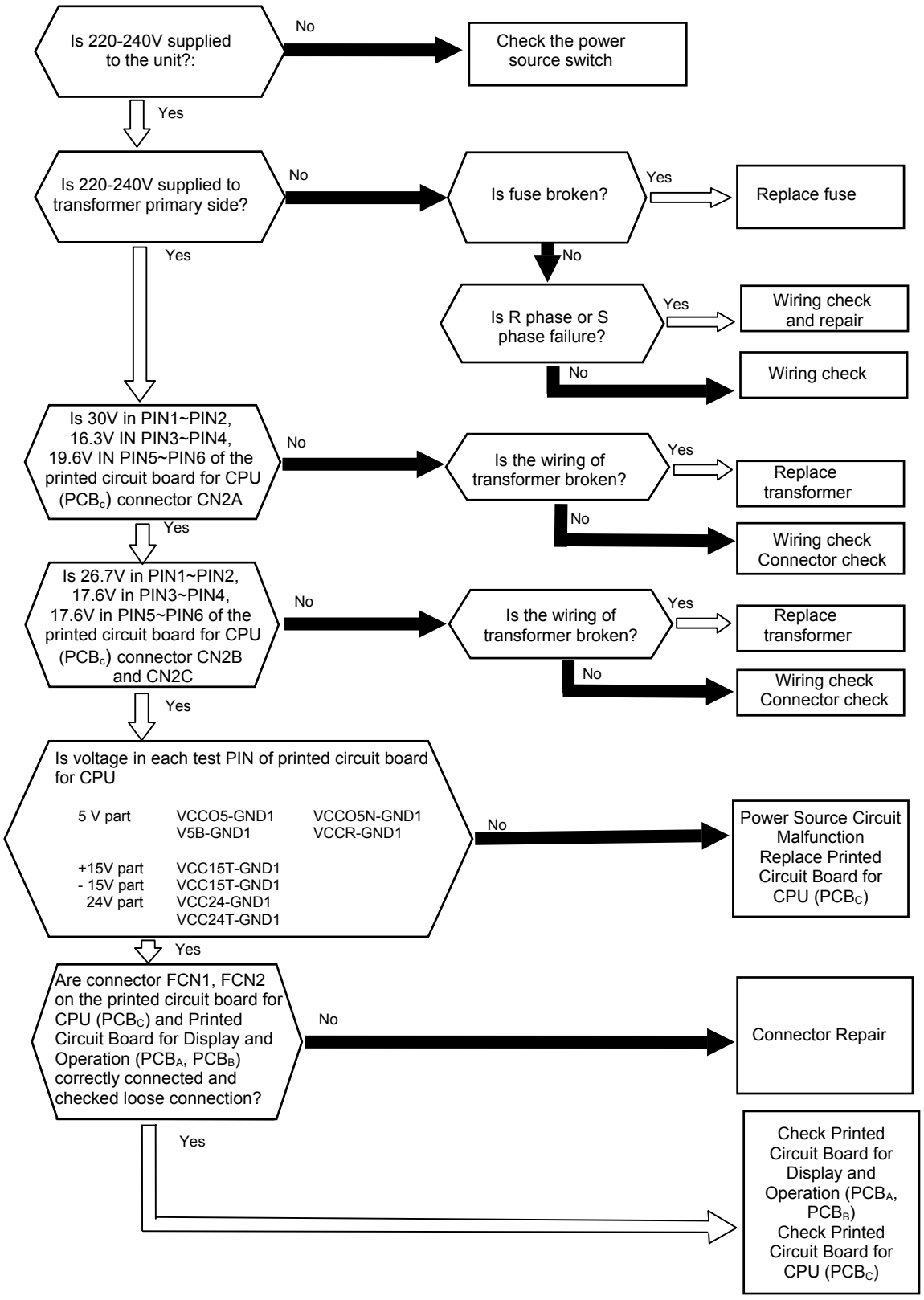
Alarm Code No.1~6 cycles	Description of abnormality
[E1-L1]~[E6-L6]	Excessively Low Pressure
[E1-E1]~[E6-E6]	Low Pressure Protection by Suction Gas Thermistor
[E1-91]~[E6-96]	Excess Low Temperature of Cooler Inlet Refrigerant
[E1-P6]~[E6-P6]	Freezing Protection Control by Cooler Inlet Refrigerant Temperature and excess low suction pressure (retry operation)
[13-13]	Activation of Freezing Protection Control
[E1-H1]~[E6-H6]	Activation of High Pressure Switch
[E1-61]~[E6-66]	Activation of Discharge Gas Thermostat
[E1-71]~[E6-76]	Activation of Compressor Internal Thermostat
[E1-05]~[E6-05]	Phase Abnormally
[E1-04]~[E6-04]	Error communication between Ctrl. PCB and Fan Speed Ctrl. PCB's (Low Ambient Fan Speed Ctrl. Option)
[E1-24]~[E6-24]	Failure of Thermistor set before Expansion Valve (Open / Short)
[E1-41]~[E6-46]	Activation of Fan Motor Internal Thermostat
[22-22]	Failure of Ambient Temperature Thermistor (Open / Short)
[E1-21]~[E6-21]	Failure of Cooler Inlet Refrigerant Thermistor (Open/Short)
[E1-23]~[E6-23]	Failure of Discharge Gas Thermistor (Open/Short)
[E1-25]~[E6-25]	Failure of water oulet temperature thremistor i cooler siter (Open / Short)
[E1-26]~[E6-26]	Failure of Suction Gas Thermistor (Open / Short)
[E1-27]~[E6-27]	Failure of Discharge Gas Pressure Sensor (Open / Short)
[E1-28]~[E6-28]	Failure of Suction Gas Pressure Sensor (Open / Short)
[EP-EP]	Error communication between Ctrl. PCB (PCB_{C1}, PCB_{C2})
[11-11]	Failure of Water Inlet Temperature (Open / Short)
[12-12]	Failure of Water Outlet Temperature Thermistor (Open / Short)
[15-15]	Failure of Water Outlet 2 Temperature Thermistor (Open/Short)
[16-16]	Failure of Water Outlet 3 Temperature Thermistor (Open/Short)
[40-40]	Malfunction
[E1-01]~[E6-06]	Activation of Differential Pressure Control
[E1-51]~[E6-56]	Activation of Thermal Relay for Compressor
[E1-5P]~[E6-5P]	No Feedback Signal from Water Pump
[E1-Pu]~[E6-Pu]	Alarm of Excessively High Water -Temperature
[6E-6E]	Alarm of Water Failure (Differential Water Pressure Switch Option)
[AP-AP]	Activation of Additional Protection Device (Option)

" " - " " : Flickering. **XX - XX** : SEG1-SEG2

1.3. FAILURE DIAGNOSIS METHOD

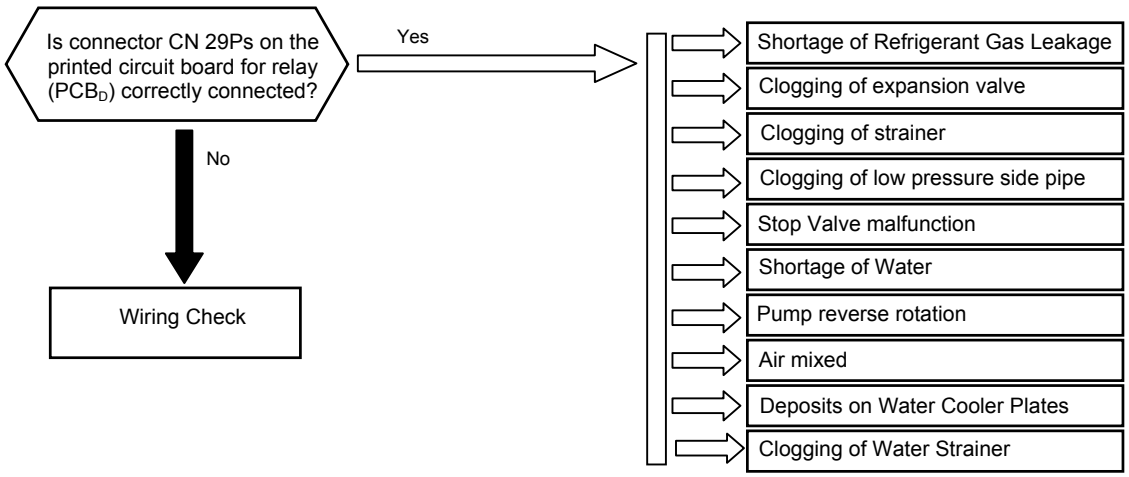
1.3.1. GENERAL CHECK OF FAILURE DIAGNOSIS.

In the case of no segment indication, unit cannot operate.



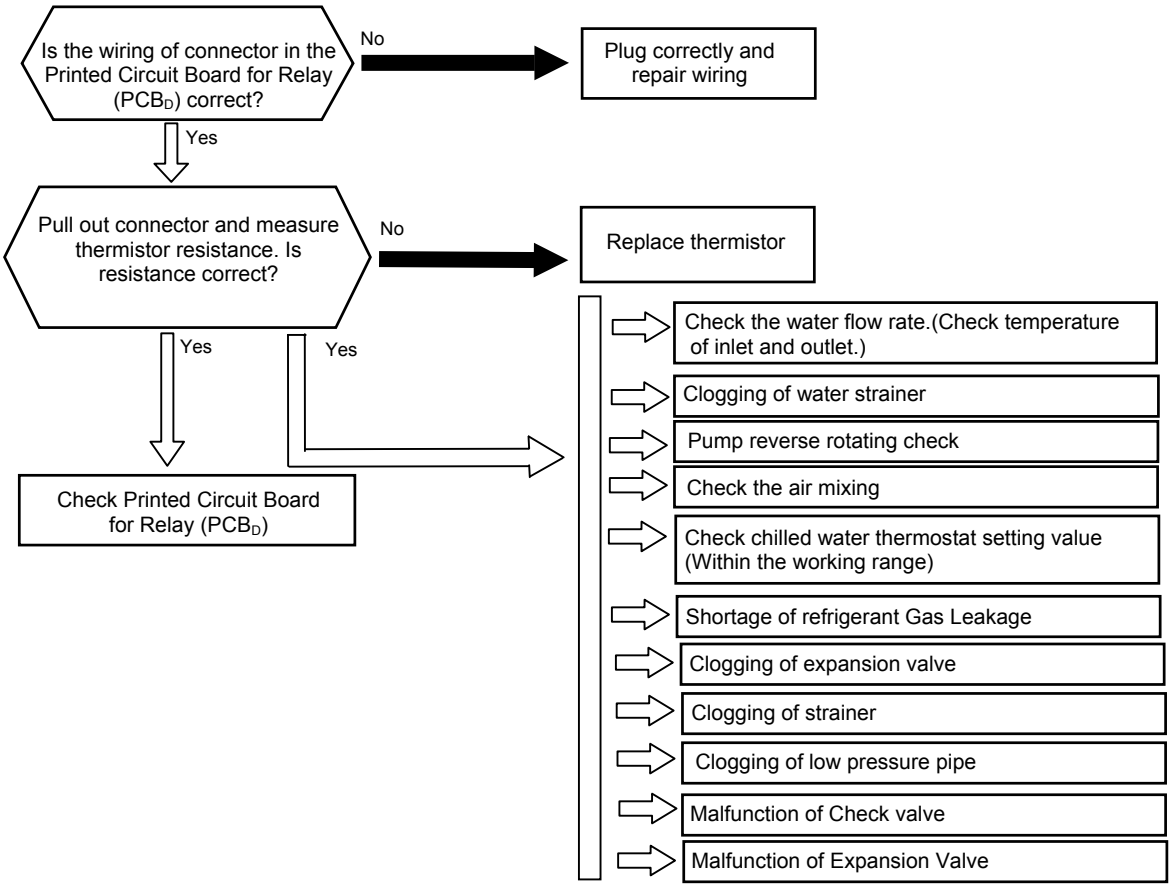
■ [C1-L1] ~ [C6-L6] Excessively Low Suction Pressure

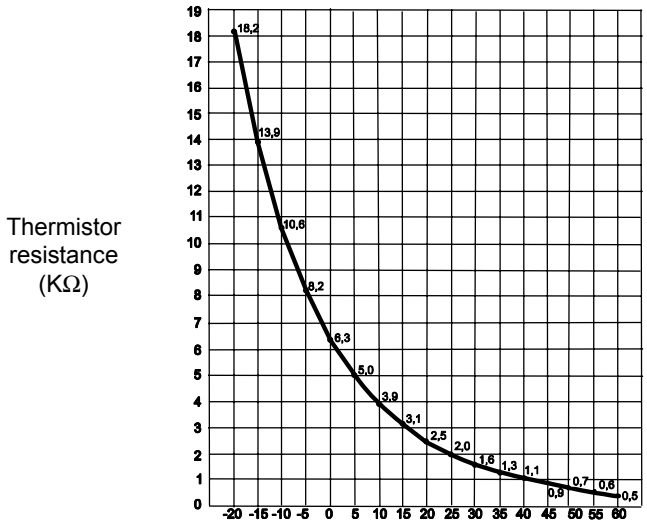
In case of the suction pressure is less than 0.31 Mpa during 90 seconds, the unit will stop at once and indicate "[C1-P6]~[C6-P6]". 3 minuts later, the unit will start again. This Alarm code is indicated when it occurs 3 times during 30 minutes (It will retry until 2 times.).



■ [E 1-E 1] ~ [E6-E6] Low Pressure Protection by Suction Gas Thermistor

This alarm code is indicated when the suction temperature is lower than -2°C during 10 seconds.

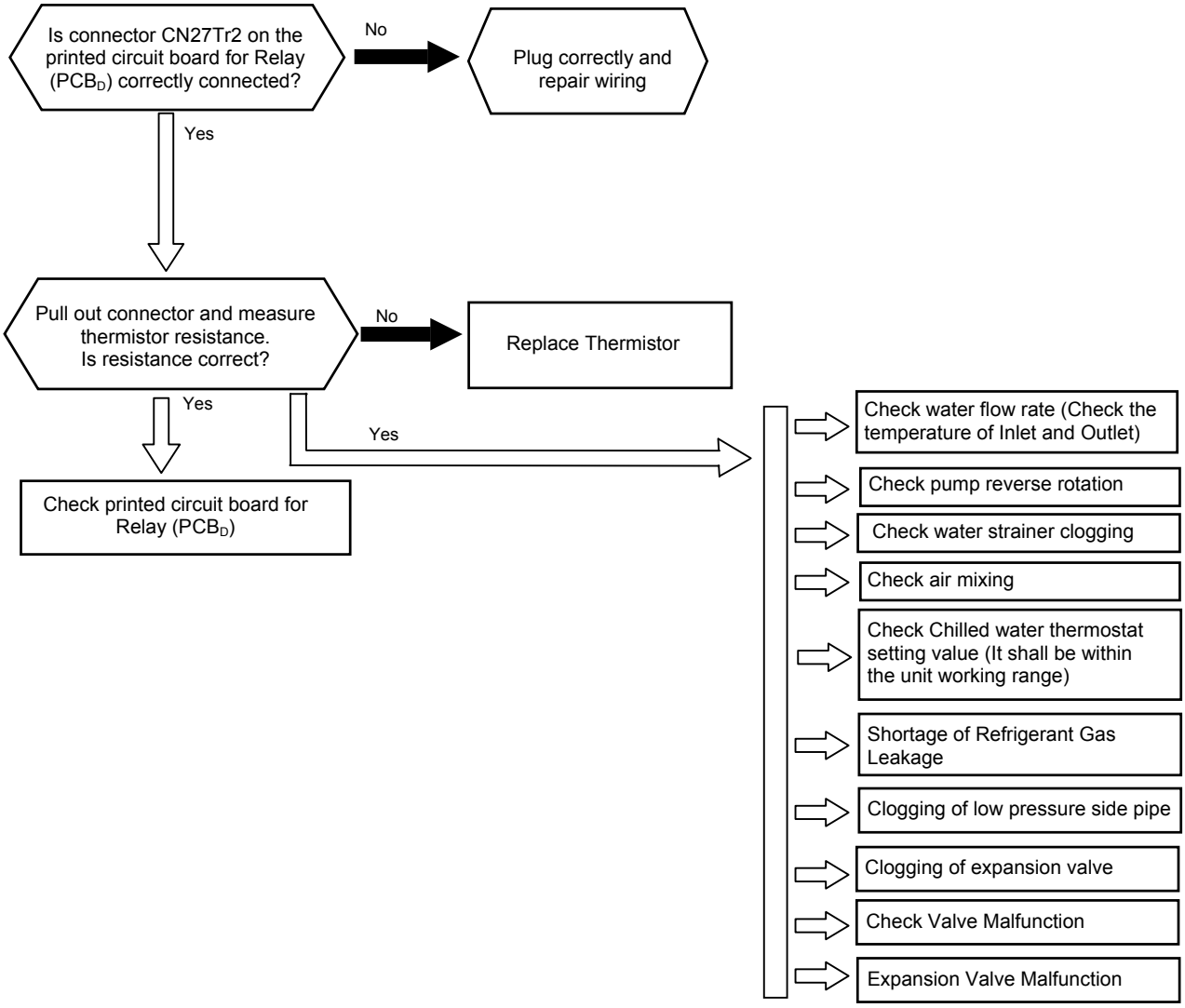




Thermistor for Suction Gas Temperature characteristics

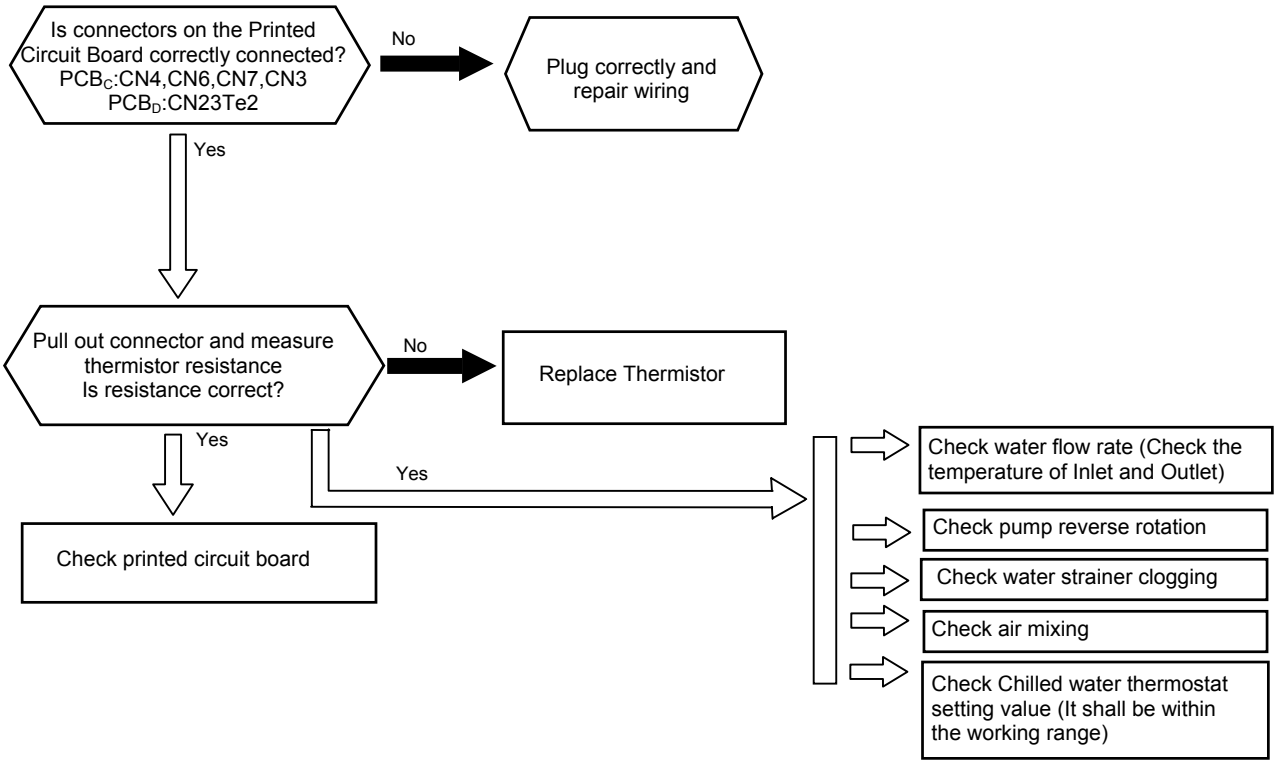
■ [E 1-91]~[E6-96] Excess Low Temperature of Cooler Inlet Refrigerant

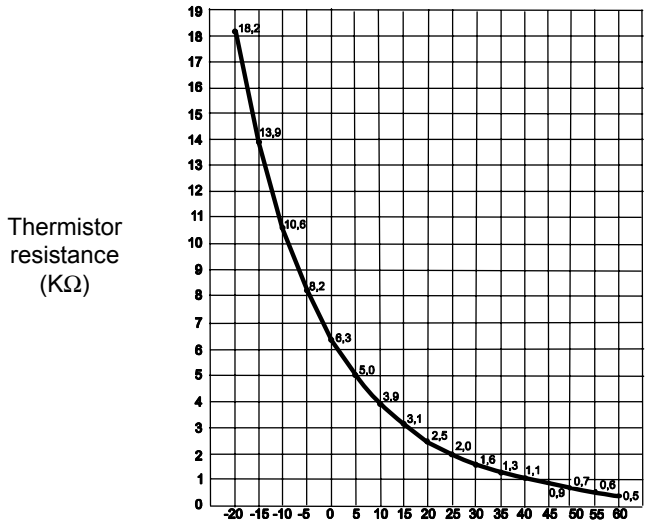
In case of the cooler inlet refrigerant temperature is lower than -3°C during 10 seconds, the unit will stop at once and indicate "[E 1-P6]~[E6-P6]". 3 minutes later, the unit will start again. This alarm code is indicated when it occurs 3 times during 30 minutes (It will retry until 2 times)



■ [13 - 13] Activation of Freeze Protection Control

This alarm code is indicated when the water inlet or outlet temperature is lower than 2°C.

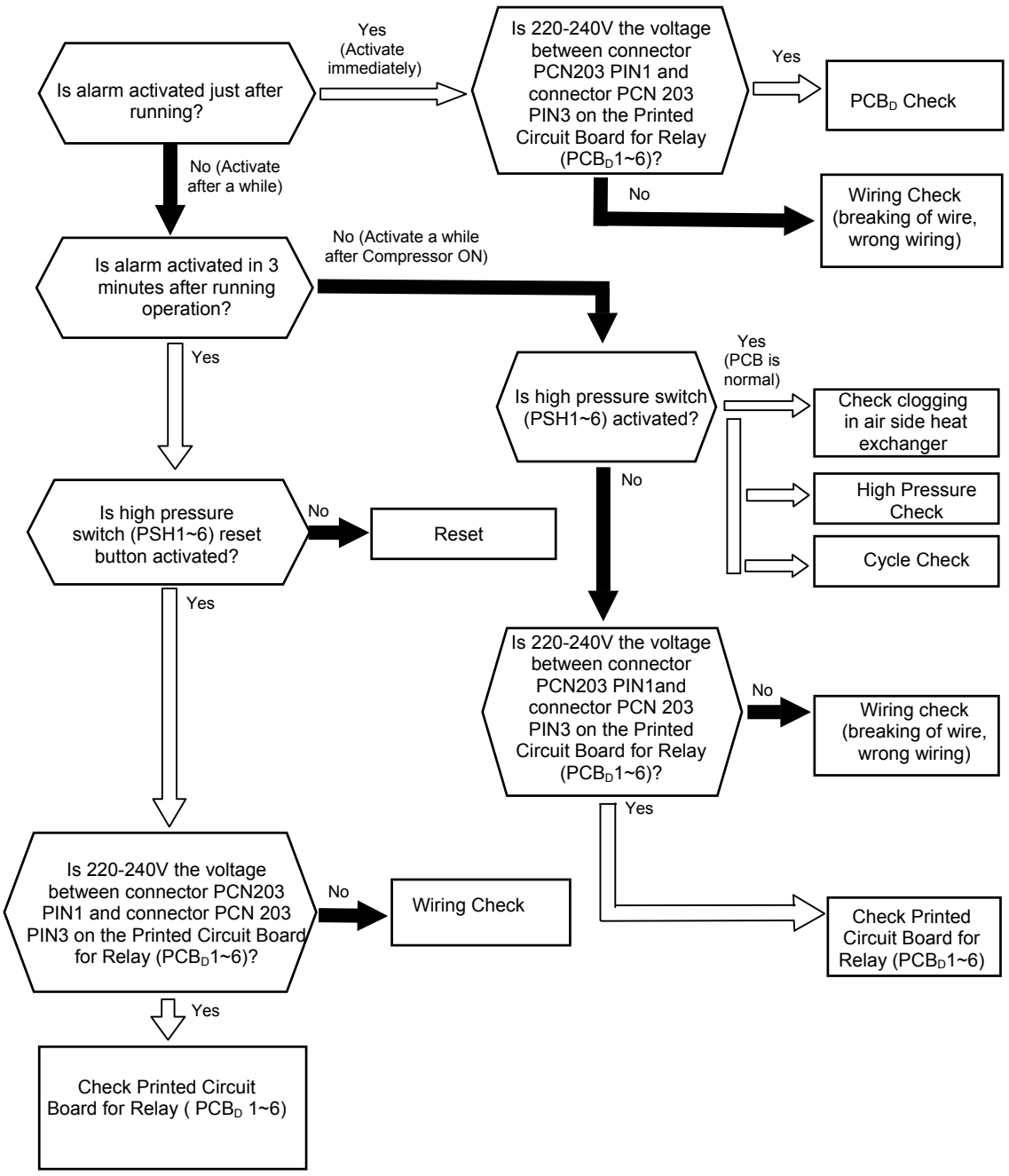




Thermistor for Water Temperature characteristics

■ [E1-H1] ~ [E6-H6] Activation of high pressure switch ($PSH_{1~6}$)

This alarm code is indicated when the discharge pressure is higher than 2.74 Mpa.

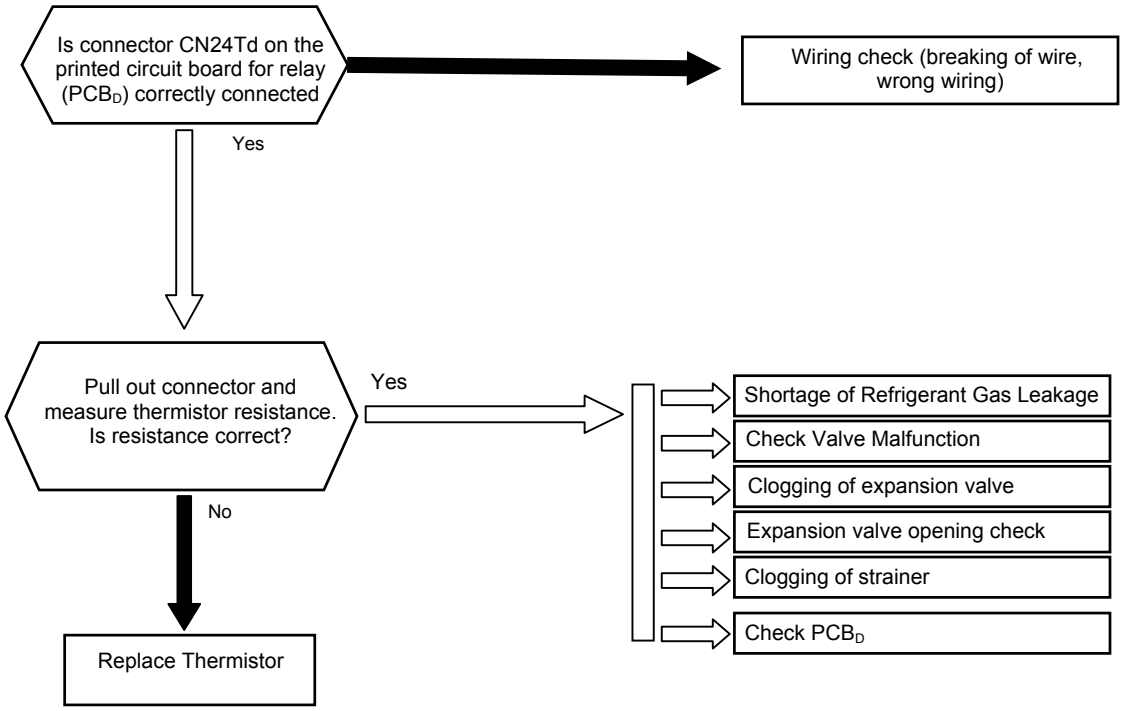


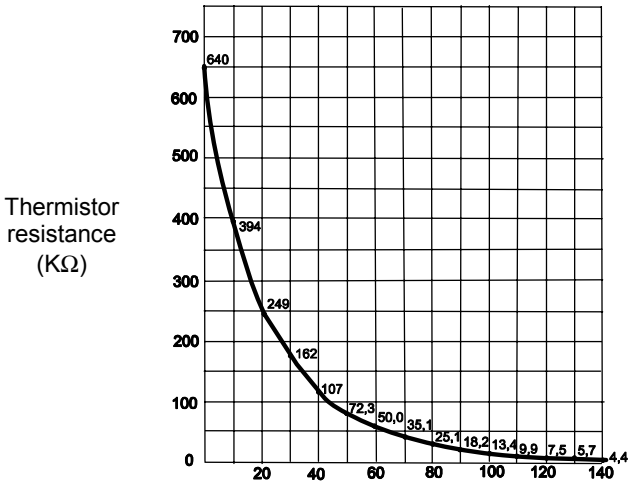
NOTE:

To check the nominal value for pressure refer to safety and control device setting table to the technical catalogue

■ [C 1-61] ~ [C6-66] Activation of Discharge Gas Thermostat

This alarm code is indiacted when the temperature in discharge pipe is higher than 140ºC

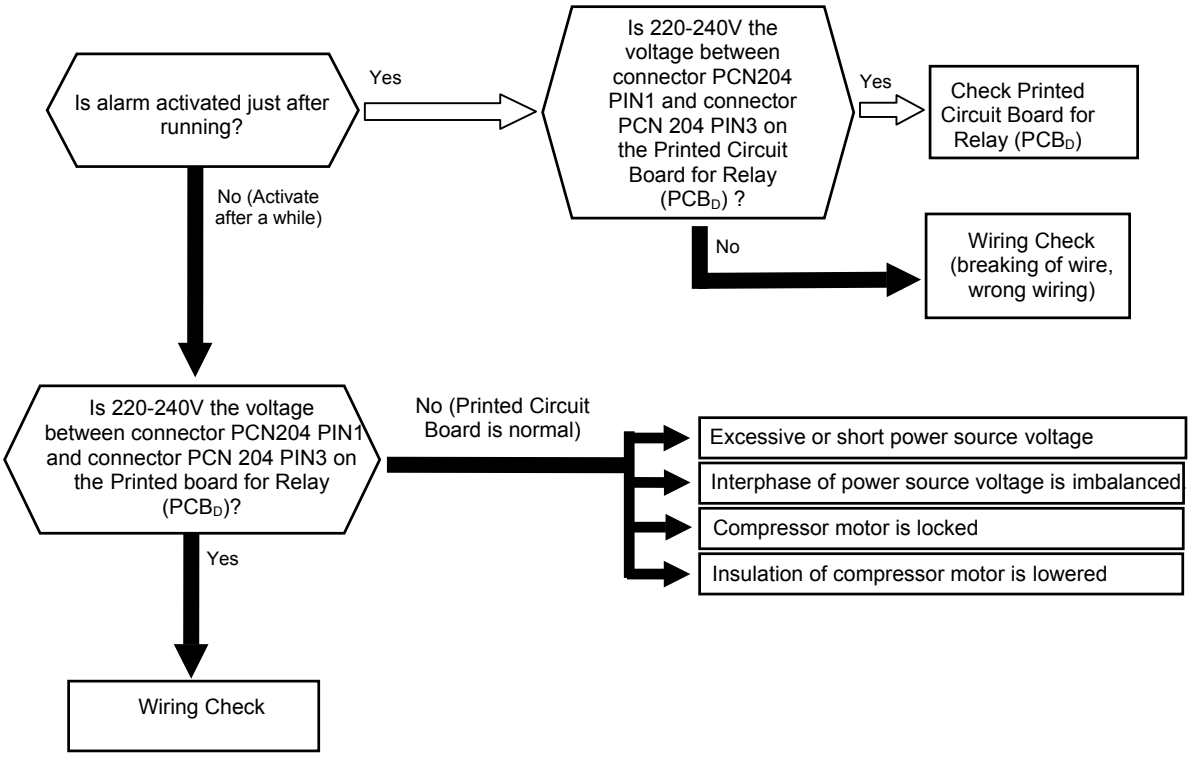




Thermistor for Discharge Gas Temperature characteristics

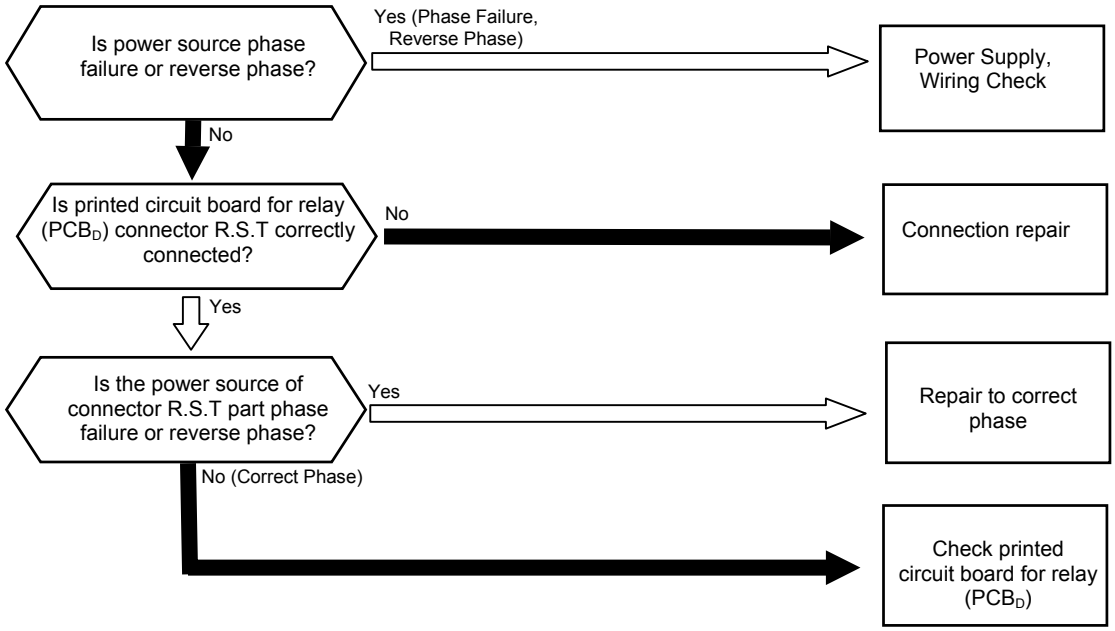
■ [E 1-71] ~ [E6-76] Activation of Compressor Internal Thermostat

This alarm code is indicated when the compressor internal thermostat is higher than 115ºC



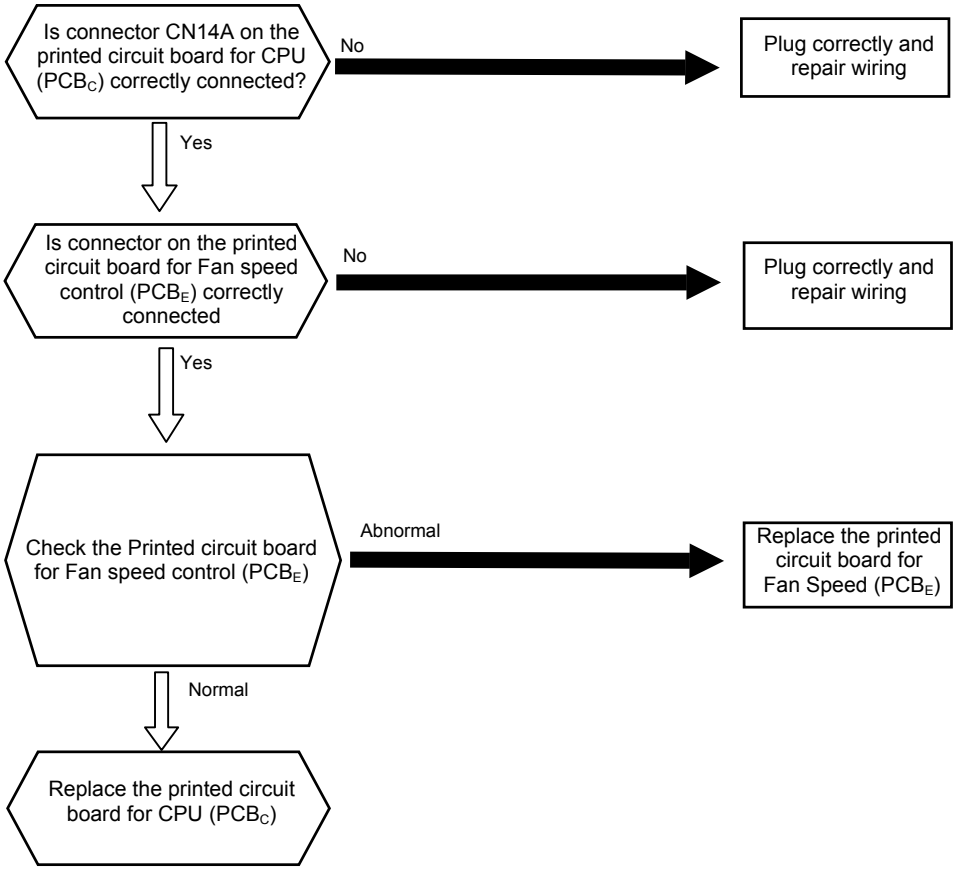
■ [E 1-05] ~ [E6-05] Phase Abnormality

This alarm code is indicated when the power source phase failure or reverse phase occur.



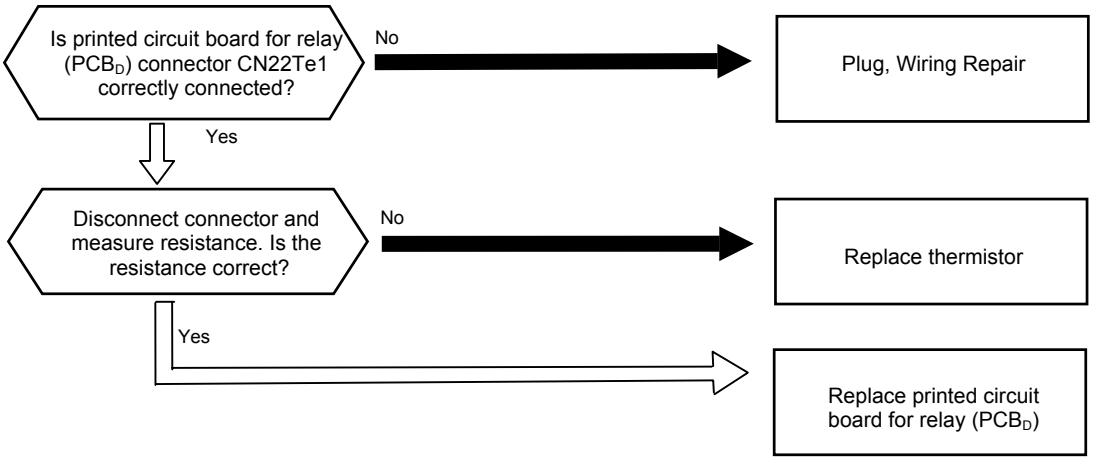
■ [C 1-04]~[C6-04] Error comunication between Ctrl. PCB and Fan speed Ctrl. PCB

This alarm code is indicated when the transmission signal is missing more than 5 seconds.



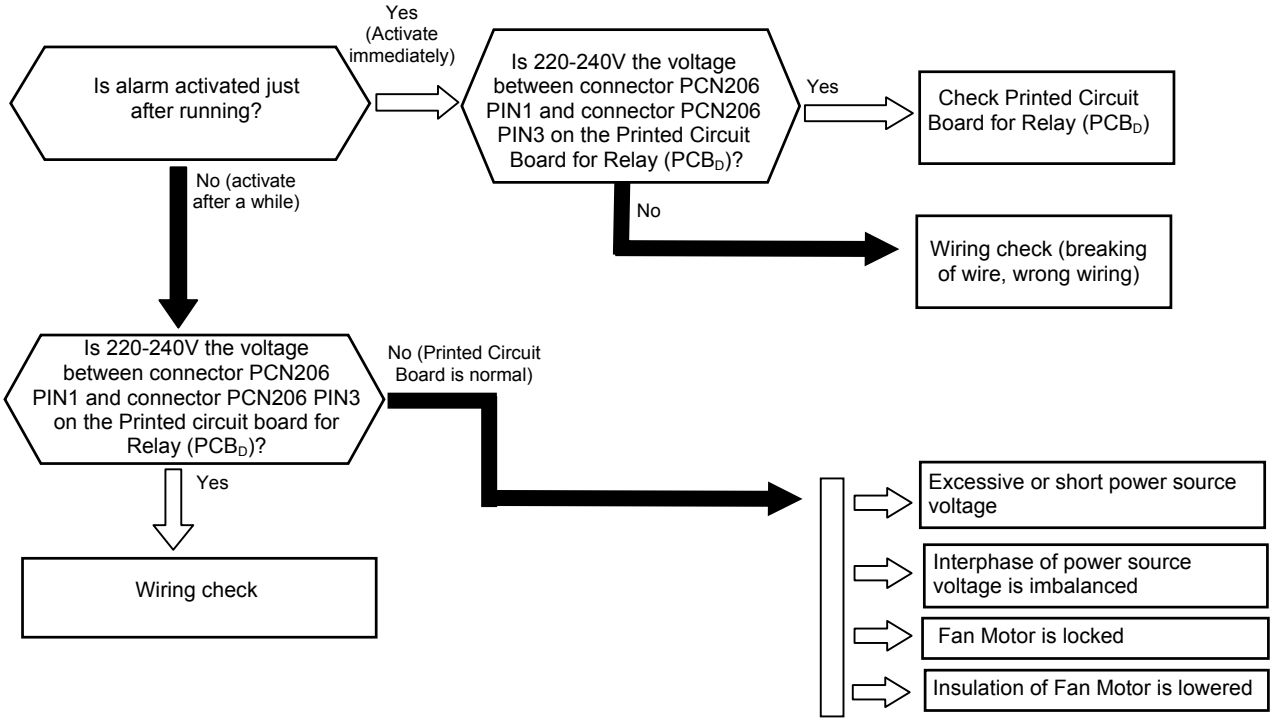
■ [E 1-24]~[E6-24] Thermistor set before Expansion Valve Abnormality

This alarm code is indicated when the thermistor resistance is out of range (72 Ω ≤ Resistance ≤ 179 kΩ)



■ [E 1-41]~[E6-46] Activation of Fan Motor Internal Thermostat

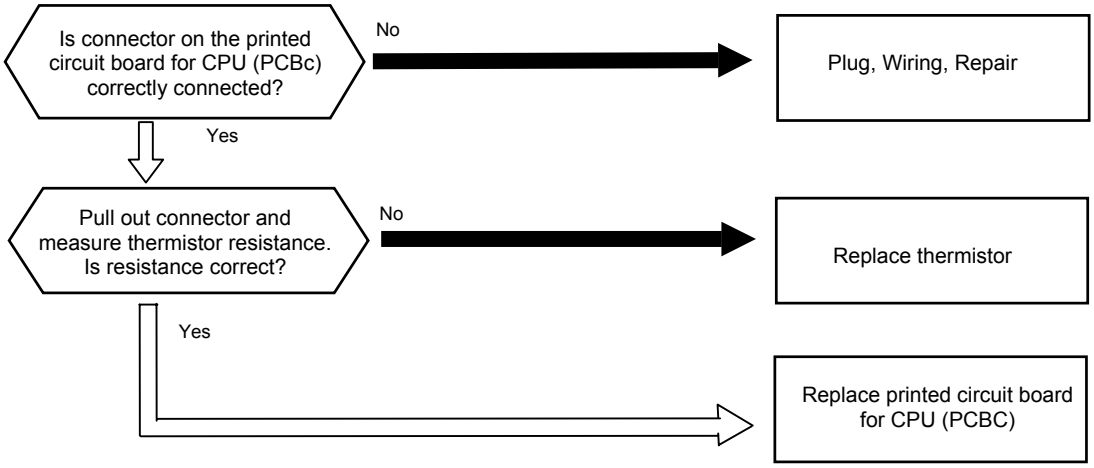
This alarm code is indicated when the fan motor internal thermostat is higher than 135ºC



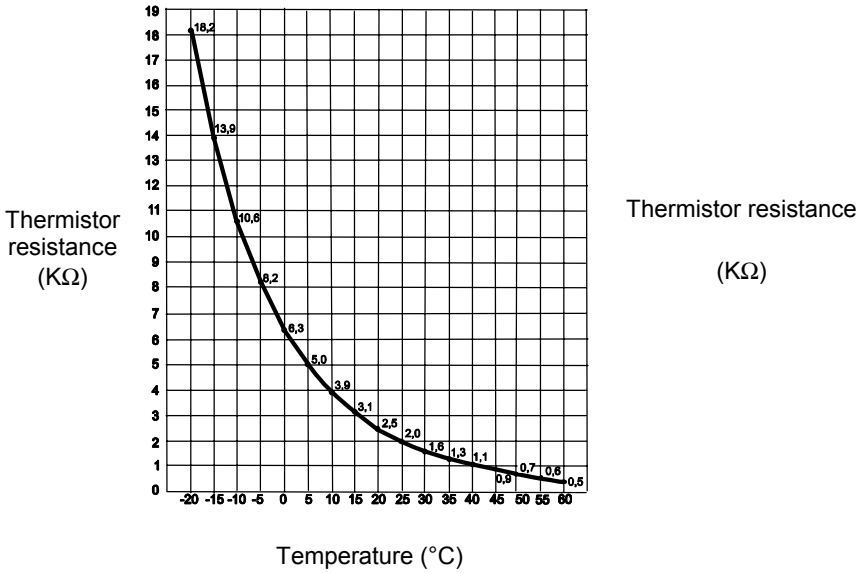
■ [11-11] [12-12] [15-15] [16-16] [22-22][C 1-25]~ [C6-25] Temperature Thermistor Abnormality

This alarm code is indicated when the thermistor resistance is out of range.
(Water Temperature Thermistor: 240 Ω ≤ Resistance ≤ 39 kΩ)
(Ambient Temperature Thermistor: 240 Ω ≤ Resistance ≤ 600 kΩ)

[11-11] Inlet Water Temperature Thermistor Abnormality
[12-12] [15-15] [16-16] Outlet Water Temperature Thermistor Abnormality
[22-22] Ambient Temperature Thermistor Abnormality



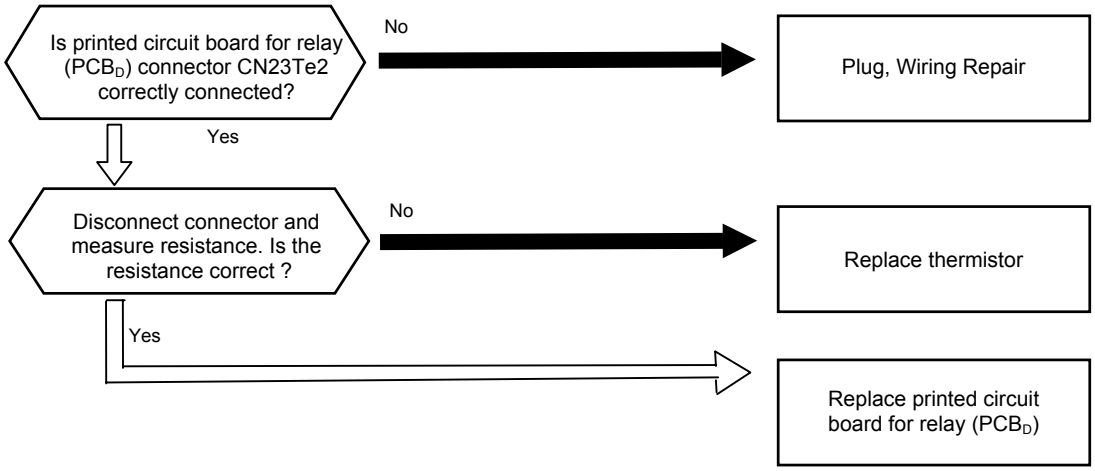
[11-11] [12-12] [15-15]
[C 1-25]~ [C6-25]
[22-22]

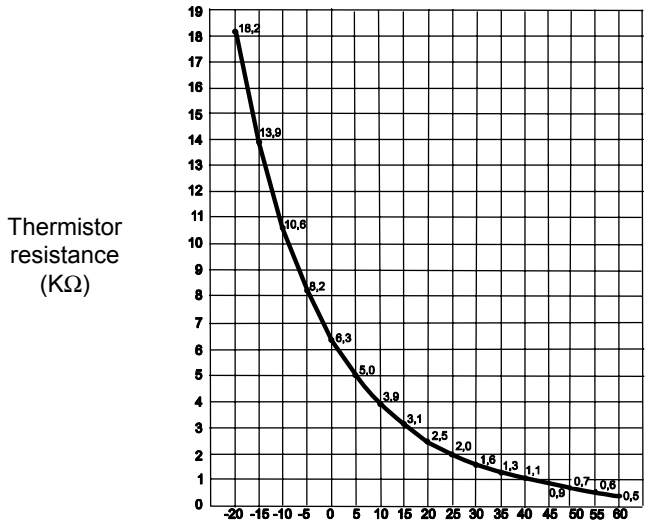


Thermistor for Water Temperature characteristics

■ [C 1-2 1]~ [C6-2 1] Cooler Inlet Refrigerant Temperature Thermistor Abnormality

This alarm code is indicated when the thermistor resistance is out of range (72 Ω ≤ Resistance ≤ 179 kΩ)

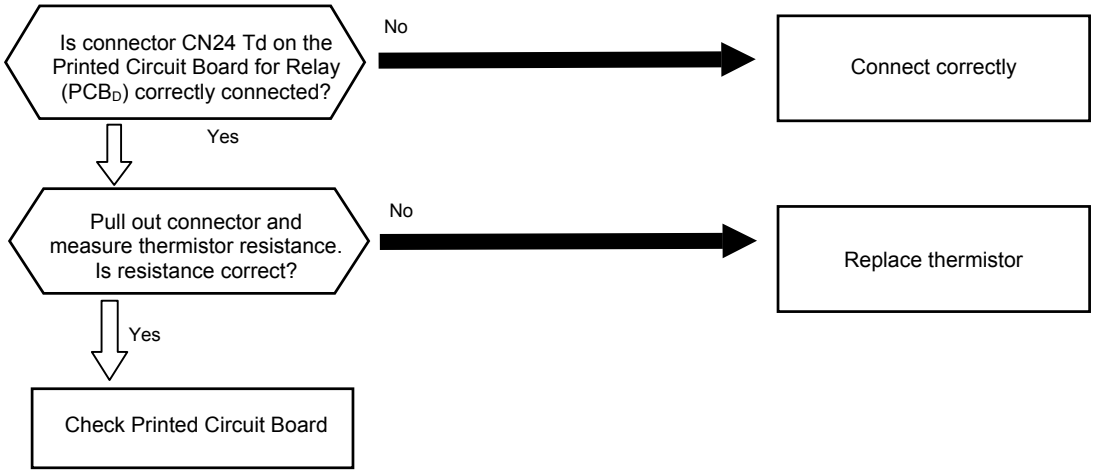


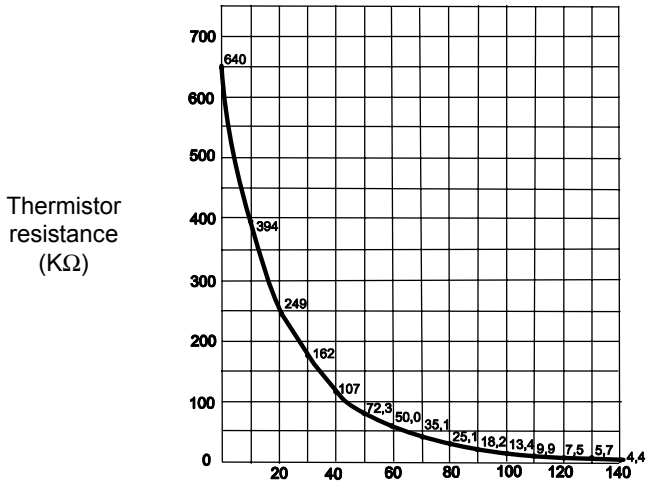


Thermistor for Cooler Inlet Refrigerant characteristics

■ [C 1-23]~[C6-23] Discharge Gas Temperature Thermistor Abnormality

This alarm code is indicated when the thermistor resistance is out of range (Refer below table).

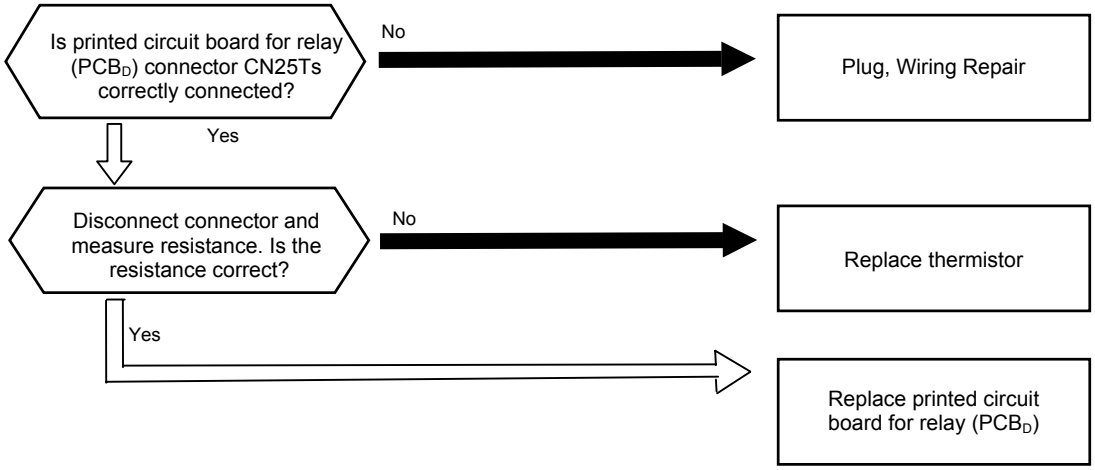


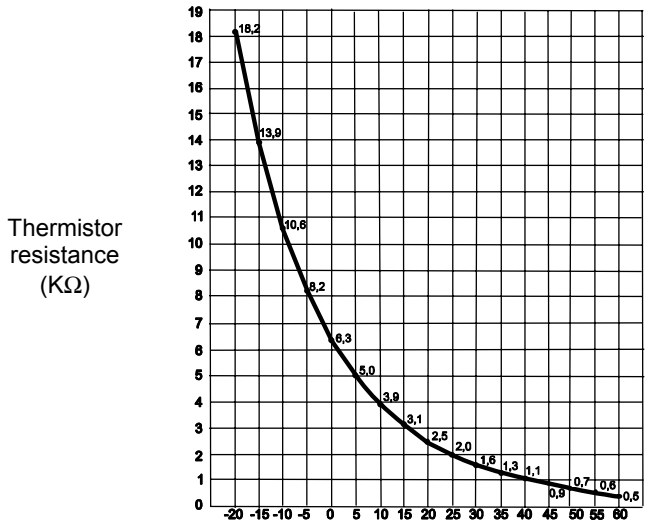


Thermistor for Discharge Gas Temperature characteristics

■ [C 1-26]~[C6-26] Suction Gas Thermister Abnormality

This alarm code is indicated when the thermistor resistance is out of range (72 Ω ≤ Resistance ≤ 179 kΩ)

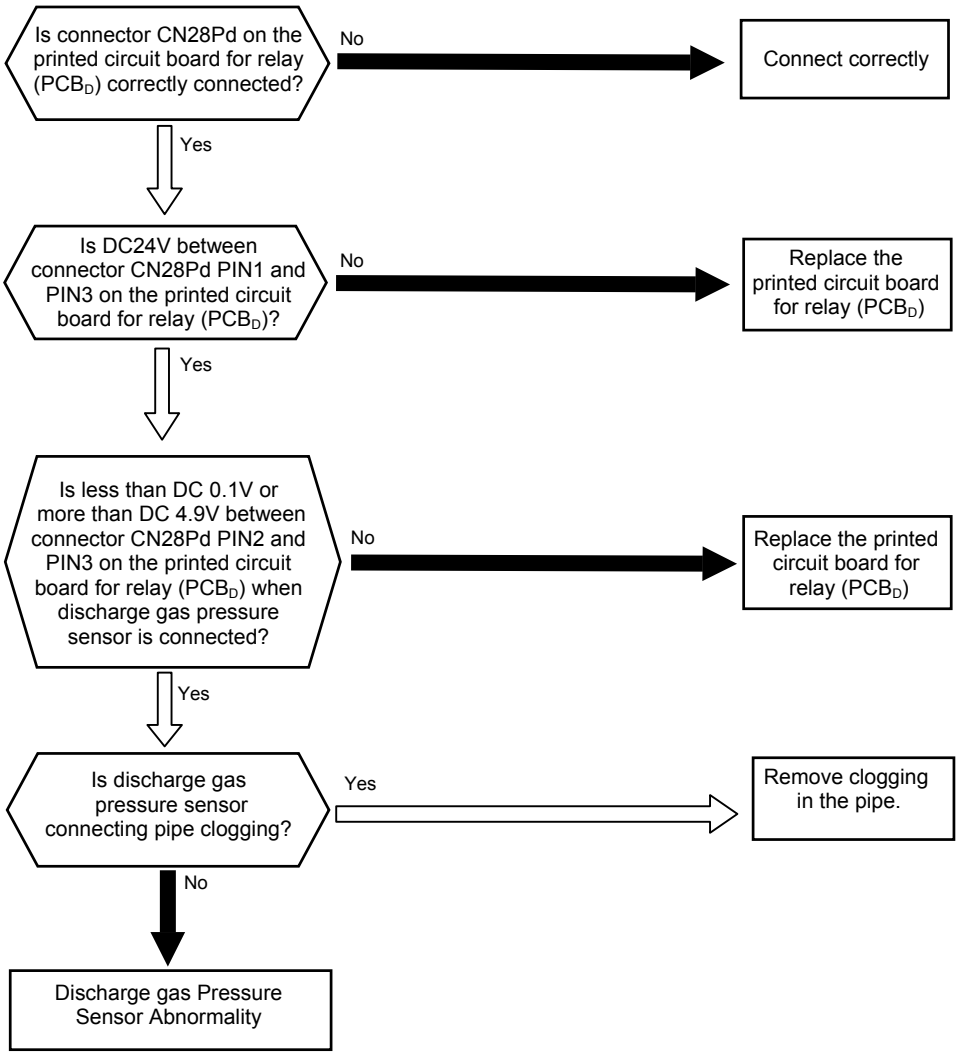




Thermistor for Suction Gas Temperature characteristics

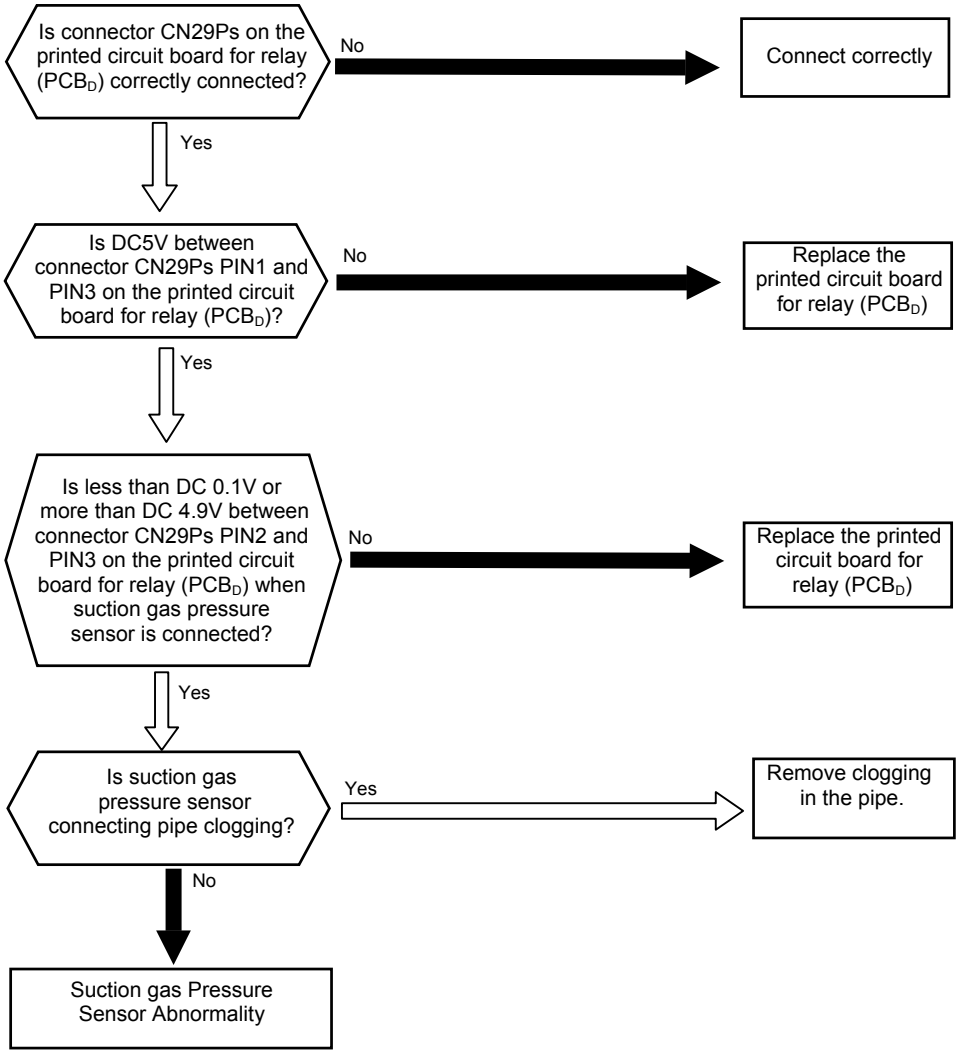
■ [E 1-27] [E6-27] Discharge Gas Pressure Sensor Abnormality

Malfunction of pressure sensor



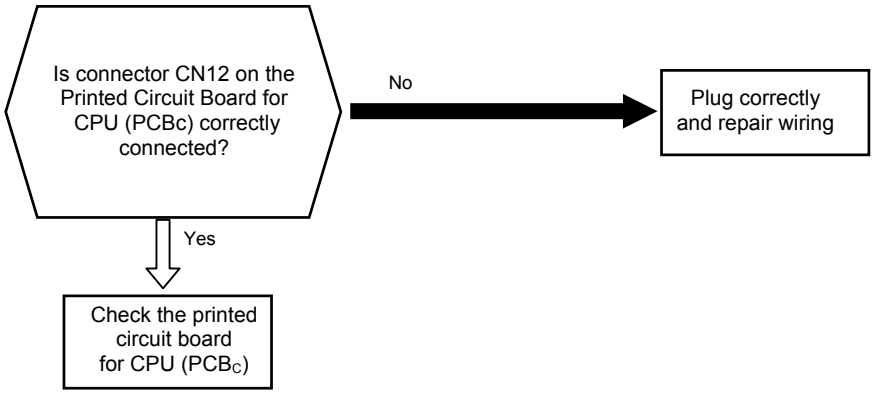
■ [E 1-28] [E6-28] Suction Gas Pressure Sensor Abnormality

Malfunction of pressure sensor



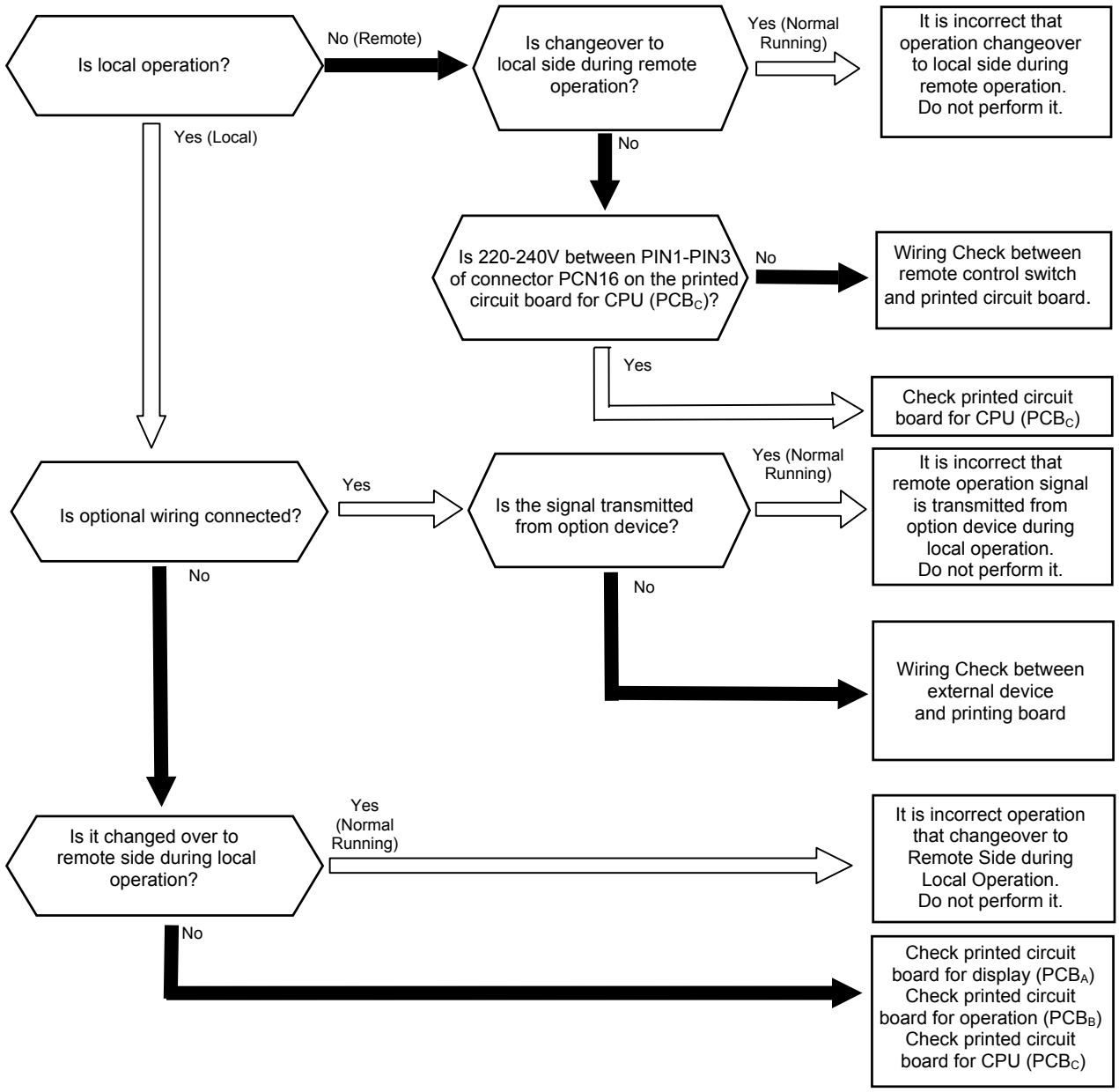
■ [CP-CP] Error comunication between Ctrl. PCB

This alarm code is indicated when the transmission signal between Ctrol PCB is missing more than 30 seconds.



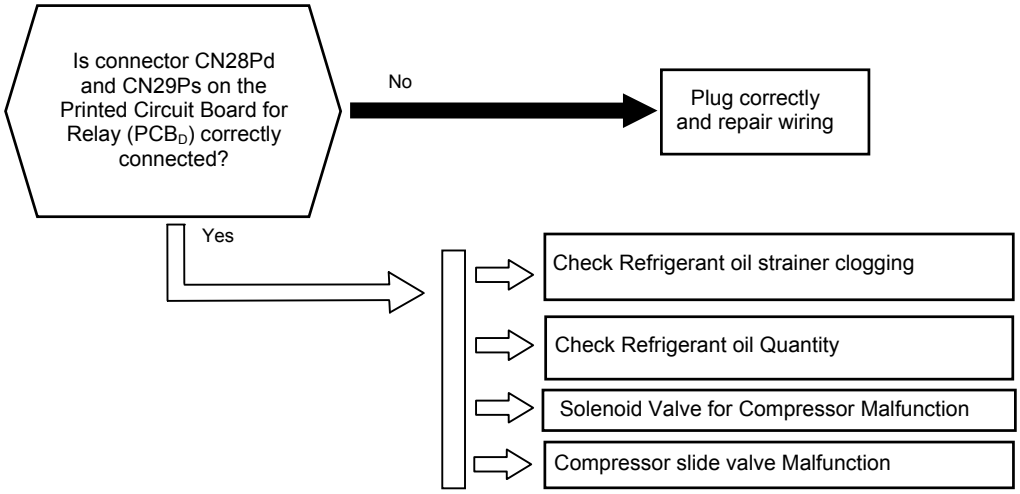
■ [40-40] Alarm for Operation Error

Performed incorrect operation.



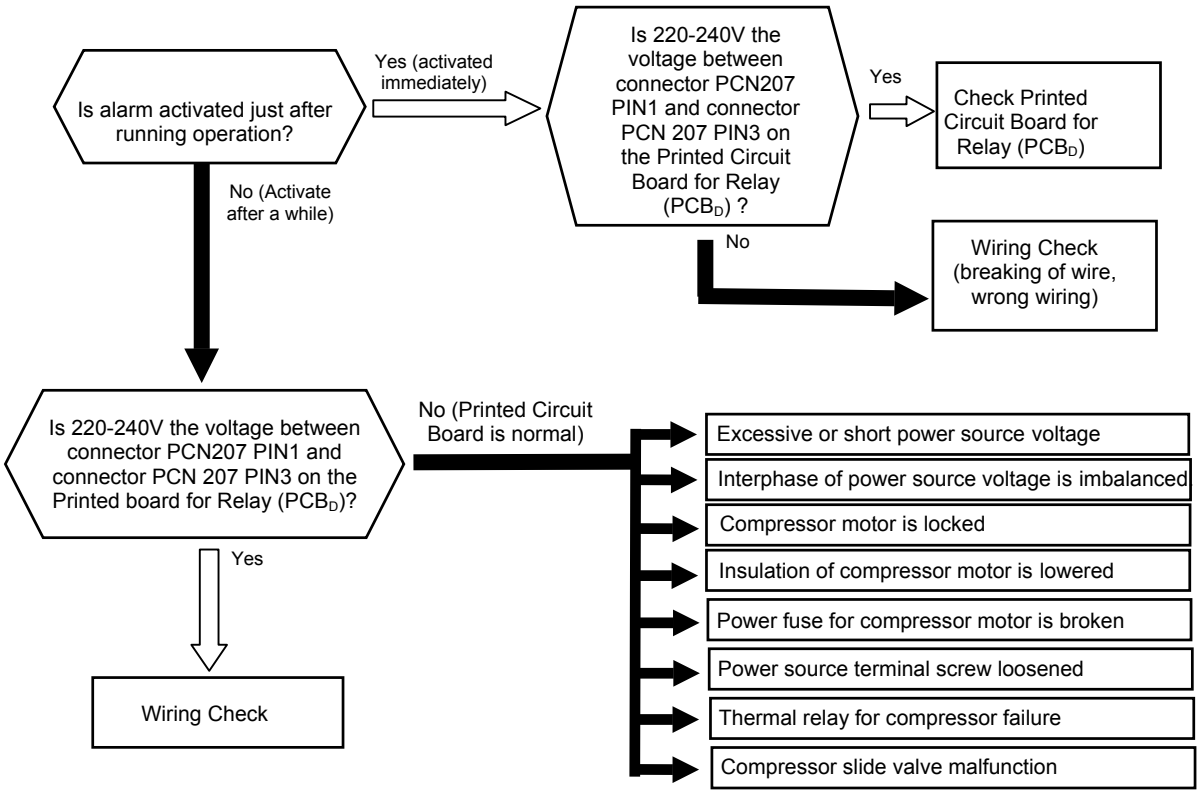
■ [E1-01] ~ [E6-06] Activation of Differential Pressure Control

This alarm code is indicated when the pressure difference between discharge and suction pressure is less than 0.3 Mpa during 3 minutes.



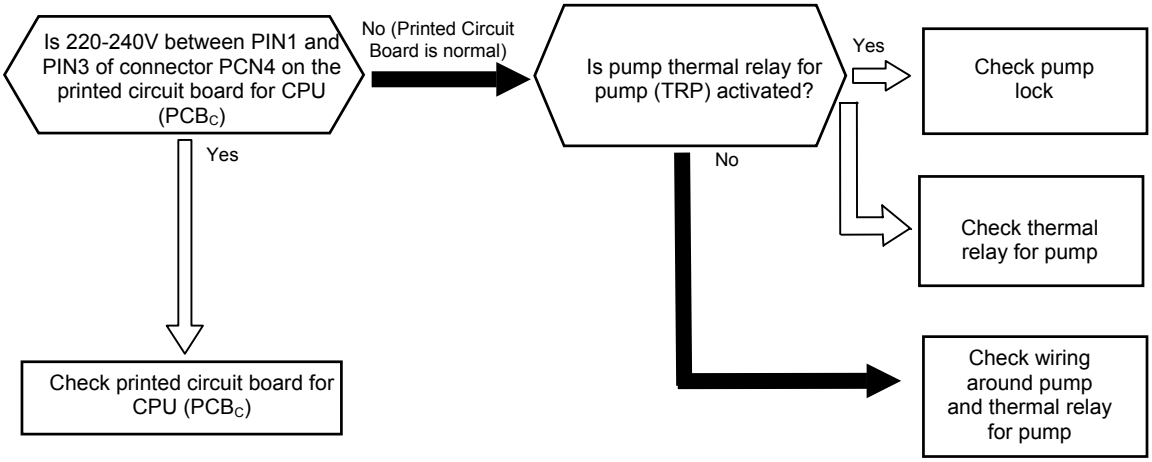
■ [E 1-51] ~ [E6-56] Activation of Thermal Relay for Compressor

This alarm code is indicated when the compressor running current is more than thermal Relay Setting Value.



■ [E 1-5P] ~ [E6-5P] No Feedback Signal from Water Pump

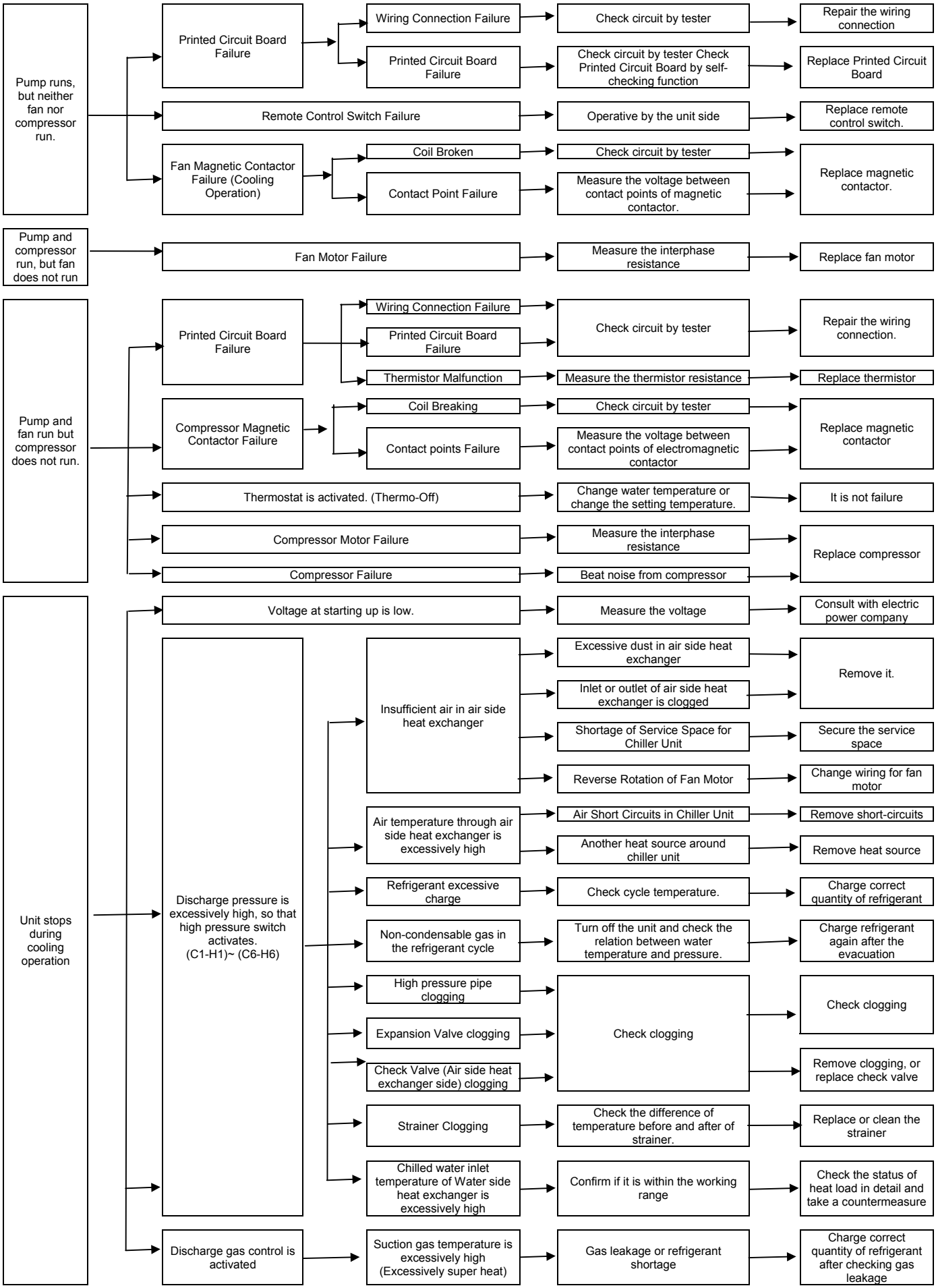
CMP pump feed back signal is not coming and Unit stops

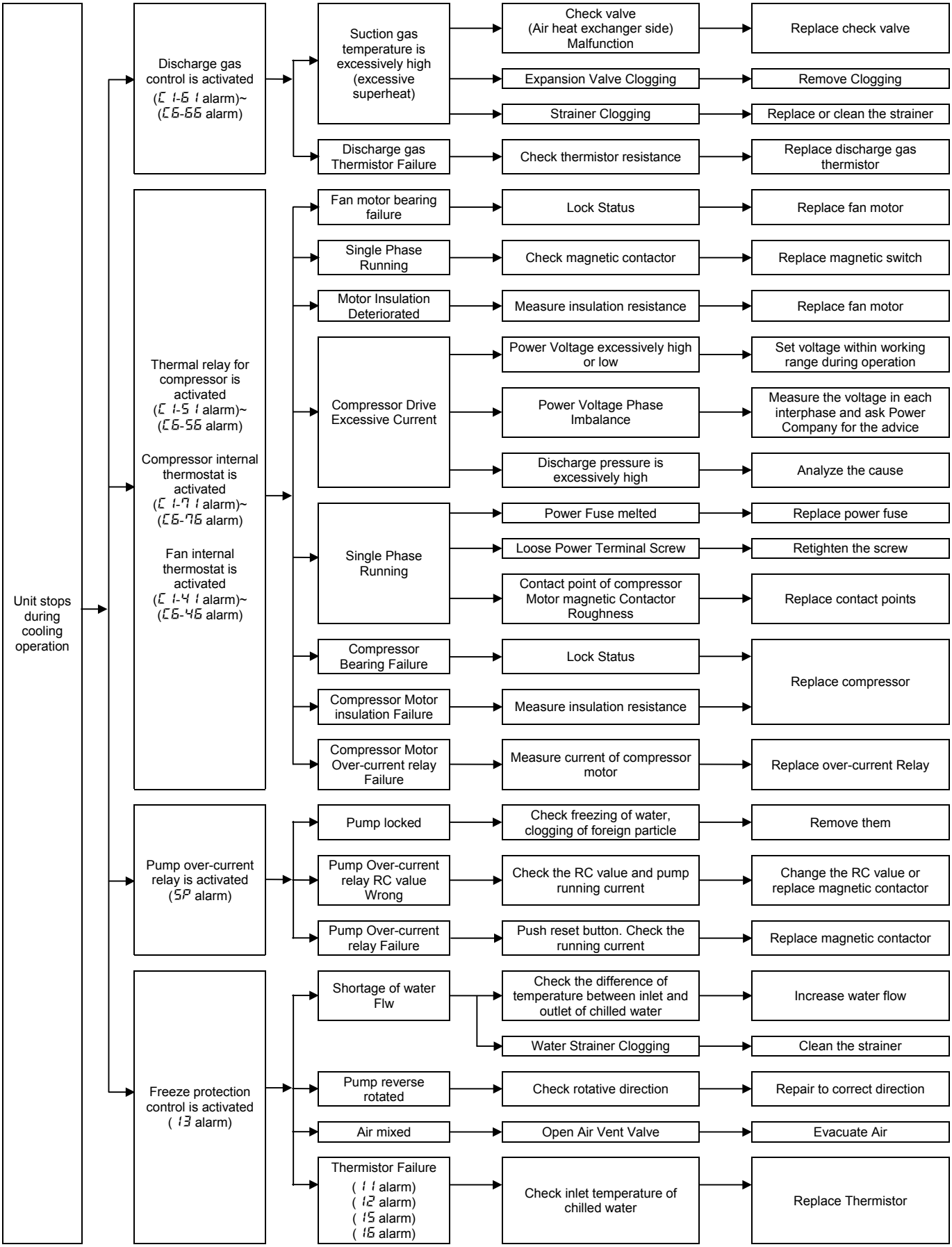


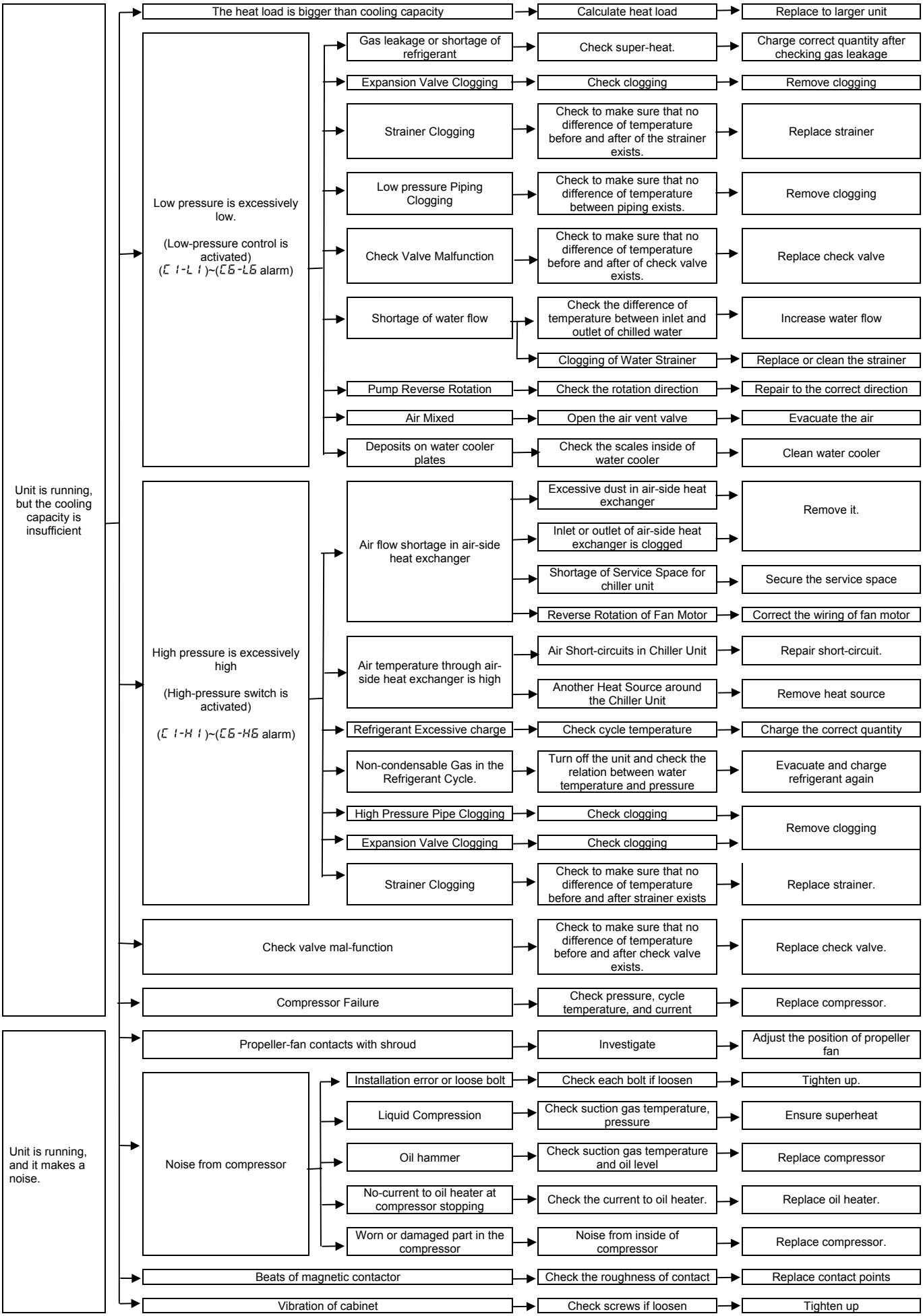
1.4. ANALYSIS AND COUNTERMEASURE OF ABNORMAL RUNNING

Chiller unit has various kinds of protection device. When the operation is not correct status due to the activation of some protection device, refer to the table below and find out the main reason to take a countermeasure.
1 failure can affect other different conditions. Thus, do not check only 1 point but analyze it from overall viewpoint in detail.

Phenomenon	Cause		Check Point	Countermeasure
It does not run when operate	Power Failure		Measure voltage by tester.	Wait the recovery of power source
	Power is OFF		Check power switch.	Power Switch ON
	Fuse for power source is melted	Wiring Short Circuit	Check falling of wiring coating.	Eliminate short-circuit and replace fuse.
		Wiring Earth Fault	Measure insulation resistance.	Eliminate the earth fault and replace fuse.
		Compressor Motor Failure	Measure the interphase resistance, insulation resistance.	Replace compressor and fuse.
		Fan Motor Failure		Replace fan motor and fuse
	Fuse for operation circuit is melted	Wiring Short-circuit	Check falling of wiring device.	Eliminate short-circuit and replace fuse..
		Earth Fault in Operation Circuit	Measure insulation resistance.	Eliminate earth fault and replace fuse
		Magnetic Contactor for Compressor Motor Failure	Measure the coil resistance.	Replace magnetic contactor and fuse.
		Magnetic Contactor for Fan Motor Failure		
		Magnetic Contactor for pump motor Failure		
		Auxiliary Relay Coil Failure		Replace auxiliary relay and fuse.
		Solenoid Valve Coil Failure		Replace solenoid coil and fuse.
		Printed Circuit Board Short-Circuit	Conductive Foreign Particle.	Remove the particle and replace fuse
		Crankcase Heater Failure	Measure resistance.	Replace oil heater and fuse.
	Trans Coil Failure		Measure the transformer secondary voltage.	Replace transformer.
	Remote Control Wiring Incorrect		Wiring	Change wiring.
	R, S, T phase of power source is phase failure or reverse phase. (05 alarm)		Check the connection of R, S, and T phase	Change to the correct phase.
	Remote Control Switch Failure. Change-over switch of Printed Circuit Board is “Local” (40 alarm)		Check changeover switch.	Replace remote control switch. Turn changeover switch on “Remote
	Printed Circuit Board Failure	Wiring Connection Failure	Check the current by tester.	Repair the wiring connection
		Printed Circuit Board Failure		Replace the Printed Circuit Board
	Pump Magnetic Contactor for Pump Failure (52P)	Breaking of Coil	Measure the voltage of contact point of magnetic contactor	Replace magnetic contactor for pump
		Loose Connection		
Pump stops before compressor running	Pump Over-current Relay Activated (TRP) (5P Alarm)	Pump locked	Check water freeze, clogging of foreign particle.	Remove it.
		Pump Over-current relay RC Value Wrong	Check the RC value and pump running current.	Change the RC value or replace magnetic contactor.
		Pump over-current relay failure	Push reset button and check running current.	Replace magnetic contactor.

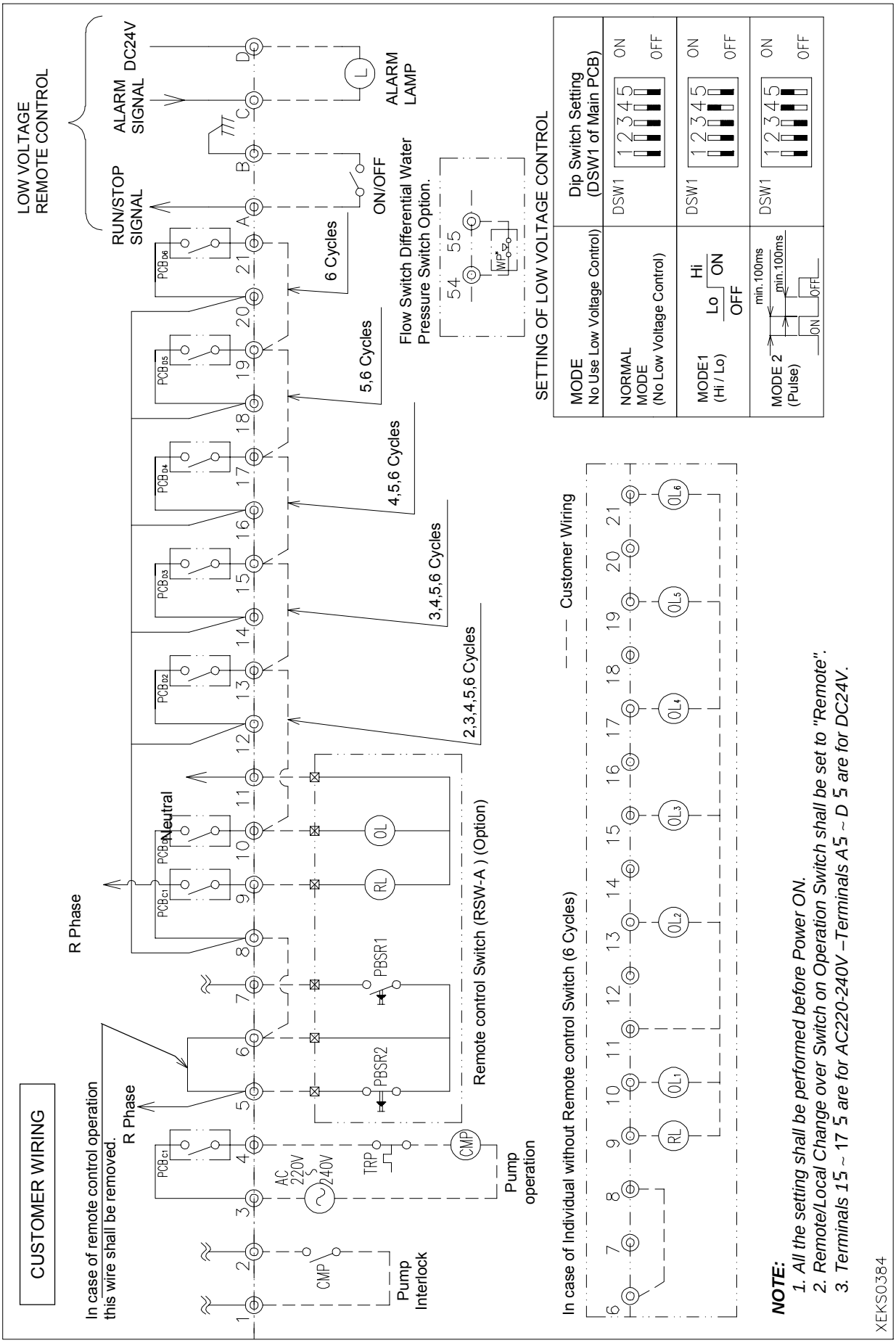

Pump runs, but neither fan nor compressor run.
Printed Circuit Board Failure
Wiring Connection Failure
Check circuit by tester
Repair the wiring connection
Printed Circuit Board Failure
Check circuit by tester Check Printed Circuit Board by self-checking function
Replace Printed Circuit Board
Remote Control Switch Failure
Operative by the unit side
Replace remote control switch.
Fan Magnetic Contactor Failure (Cooling Operation)
Coil Broken
Check circuit by tester
Contact Point Failure
Measure the voltage between contact points of magnetic contactor.
Replace magnetic contactor.
Pump and compressor run, but fan does not run
Fan Motor Failure
Measure the interphase resistance
Replace fan motor
Pump and fan run but compressor does not run.
Printed Circuit Board Failure
Wiring Connection Failure
Printed Circuit Board Failure
Check circuit by tester
Repair the wiring connection.
Thermistor Malfunction
Measure the thermistor resistance
Replace thermistor
Compressor Magnetic Contactor Failure
Coil Breaking
Check circuit by tester
Contact points Failure
Measure the voltage between contact points of electromagnetic contactor
Replace magnetic contactor
Thermostat is activated. (Thermo-Off)
Change water temperature or change the setting temperature.
It is not failure
Compressor Motor Failure
Measure the interphase resistance
Replace compressor
Compressor Failure
Beat noise from compressor
Unit stops during cooling operation
Voltage at starting up is low.
Measure the voltage
Consult with electric power company
Discharge pressure is excessively high, so that high pressure switch activates. (C1-H1)~ (C6-H6)
Insufficient air in air side heat exchanger
Excessive dust in air side heat exchanger
Inlet or outlet of air side heat exchanger is clogged
Remove it.
Shortage of Service Space for Chiller Unit
Secure the service space
Reverse Rotation of Fan Motor
Change wiring for fan motor
Air temperature through air side heat exchanger is excessively high
Air Short Circuits in Chiller Unit
Remove short-circuits
Another heat source around chiller unit
Remove heat source
Refrigerant excessive charge
Check cycle temperature.
Charge correct quantity of refrigerant
Non-condensable gas in the refrigerant cycle
Turn off the unit and check the relation between water temperature and pressure.
Charge refrigerant again after the evacuation
High pressure pipe clogging
Check clogging
Check clogging
Expansion Valve clogging
Check Valve (Air side heat exchanger side) clogging
Remove clogging, or replace check valve
Strainer Clogging
Check the difference of temperature before and after of strainer.
Replace or clean the strainer
Chilled water inlet temperature of Water side heat exchanger is excessively high
Confirm if it is within the working range
Check the status of heat load in detail and take a countermeasure
Discharge gas control is activated
Suction gas temperature is excessively high (Excessively super heat)
Gas leakage or refrigerant shortage
Charge correct quantity of refrigerant after checking gas leakage


Unit stops during cooling operation
Discharge gas control is activated (E1-61 alarm)~ (E6-66 alarm)
Suction gas temperature is excessively high (excessive superheat)
Check valve (Air heat exchanger side) Malfunction
Replace check valve
Expansion Valve Clogging
Remove Clogging
Strainer Clogging
Replace or clean the strainer
Discharge gas Thermistor Failure
Check thermistor resistance
Replace discharge gas thermistor
Thermal relay for compressor is activated (E1-51 alarm)~ (E6-56 alarm)
Compressor internal thermostat is activated (E1-71 alarm)~ (E6-76 alarm)
Fan internal thermostat is activated (E1-41 alarm)~ (E6-46 alarm)
Fan motor bearing failure
Lock Status
Replace fan motor
Single Phase Running
Check magnetic contactor
Replace magnetic switch
Motor Insulation Deteriorated
Measure insulation resistance
Replace fan motor
Compressor Drive Excessive Current
Power Voltage excessively high or low
Set voltage within working range during operation
Power Voltage Phase Imbalance
Measure the voltage in each interphase and ask Power Company for the advice
Discharge pressure is excessively high
Analyze the cause
Single Phase Running
Power Fuse melted
Replace power fuse
Loose Power Terminal Screw
Retighten the screw
Contact point of compressor Motor magnetic Contactor Roughness
Replace contact points
Compressor Bearing Failure
Lock Status
Replace compressor
Compressor Motor insulation Failure
Measure insulation resistance
Compressor Motor Over-current relay Failure
Measure current of compressor motor
Replace over-current Relay
Pump over-current relay is activated (SP alarm)
Pump locked
Check freezing of water, clogging of foreign particle
Remove them
Pump Over-current relay RC value Wrong
Check the RC value and pump running current
Change the RC value or replace magnetic contactor
Pump Over-current relay Failure
Push reset button. Check the running current
Replace magnetic contactor
Freeze protection control is activated (13 alarm)
Shortage of water Flw
Check the difference of temperature between inlet and outlet of chilled water
Increase water flow
Water Strainer Clogging
Clean the strainer
Pump reverse rotated
Check rotative direction
Repair to correct direction
Air mixed
Open Air Vent Valve
Evacuate Air
Thermistor Failure (11 alarm) (12 alarm) (15 alarm) (16 alarm)
Check inlet temperature of chilled water
Replace Thermistor


Unit is running, but the cooling capacity is insufficient
The heat load is bigger than cooling capacity
Calculate heat load
Replace to larger unit
Low pressure is excessively low.
(Low-pressure control is activated)
(E1-L1)~(E6-L6 alarm)
Gas leakage or shortage of refrigerant
Check super-heat.
Charge correct quantity after checking gas leakage
Expansion Valve Clogging
Check clogging
Remove clogging
Strainer Clogging
Check to make sure that no difference of temperature before and after of the strainer exists.
Replace strainer
Low pressure Piping Clogging
Check to make sure that no difference of temperature between piping exists.
Remove clogging
Check Valve Malfunction
Check to make sure that no difference of temperature before and after of check valve exists.
Replace check valve
Shortage of water flow
Check the difference of temperature between inlet and outlet of chilled water
Increase water flow
Clogging of Water Strainer
Replace or clean the strainer
Pump Reverse Rotation
Check the rotation direction
Repair to the correct direction
Air Mixed
Open the air vent valve
Evacuate the air
Deposits on water cooler plates
Check the scales inside of water cooler
Clean water cooler
High pressure is excessively high
(High-pressure switch is activated)
(E1-H1)~(E6-H6 alarm)
Air flow shortage in air-side heat exchanger
Excessive dust in air-side heat exchanger
Inlet or outlet of air-side heat exchanger is clogged
Remove it.
Shortage of Service Space for chiller unit
Secure the service space
Reverse Rotation of Fan Motor
Correct the wiring of fan motor
Air temperature through air-side heat exchanger is high
Air Short-circuits in Chiller Unit
Repair short-circuit.
Another Heat Source around the Chiller Unit
Remove heat source
Refrigerant Excessive charge
Check cycle temperature
Charge the correct quantity
Non-condensable Gas in the Refrigerant Cycle.
Turn off the unit and check the relation between water temperature and pressure
Evacuate and charge refrigerant again
High Pressure Pipe Clogging
Check clogging
Remove clogging
Expansion Valve Clogging
Check clogging
Strainer Clogging
Check to make sure that no difference of temperature before and after strainer exists
Replace strainer.
Check valve mal-function
Check to make sure that no difference of temperature before and after check valve exists.
Replace check valve.
Compressor Failure
Check pressure, cycle temperature, and current
Replace compressor.
Unit is running, and it makes a noise.
Propeller-fan contacts with shroud
Investigate
Adjust the position of propeller fan
Noise from compressor
Installation error or loose bolt
Check each bolt if loosen
Tighten up.
Liquid Compression
Check suction gas temperature, pressure
Ensure superheat
Oil hammer
Check suction gas temperature and oil level
Replace compressor
No-current to oil heater at compressor stopping
Check the current to oil heater.
Replace oil heater.
Worn or damaged part in the compressor
Noise from inside of compressor
Replace compressor.
Beats of magnetic contactor
Check the roughness of contact
Replace contact points
Vibration of cabinet
Check screws if loosen
Tighten up

2. ELECTRICAL WIRING

2.1. CUSTOMER WIRING



PARTS LIST

(n=1~N)

Mark	Name	Remark	Mark	Name	Remark
MC_{1-n}	Compressor Motor		$THMs_{1-n}$	Suction Gas Temperature Thermistor	
MF_{11-n4}	Condenser Fan Motor		$THMl_{1-n}$	Liquid Temperature Thermistor	OPTION
MI	Main Isolator		$EF_{1~3,\ R,S,T}$	Fuse	6A
CMC_{1-n}	Contactor for Compressor Motor		SV_{11-n1}	Solenoid Valve for Starting	
CMC_{s1-sn}	Contactor for Compressor Motor (Start Operation)		SV_{12-n2}	Solenoid Valve for Load-down	
CMC_{D1-Dn}	Contactor for Compressor Motor (Delta Operation)		SV_{13-n3}	Solenoid Valve for Load-up	
CMF_{11-n4}	Contactor for Condenser Fan Motor		TM_{1-n}	Hour Meter	
EFC_{1-n}	Fuse for Compressor Motor	or optional Circuit Breaker	PCB_A	Printed Circuit Board for Display	
ORC_{1-n}	Overcurrent Relay for Compressor Motor		PCB_B	Printed Circuit Board for Operation	
EFF_{11-n4}	Fuse for Condenser Fan Motor	or optional Circuit Breaker	$PCB_{C1,C2}$	Printed Circuit Board for CPU	
ITC_{1-}n	Internal Thermostat for Compressor		PCB_{D1-Dn}	Printed Circuit Board for Relay	
ITF_{11-n4}	Internal Thermostat for Fan Motor		PCB_{E1-En}	Printed Circuit Board for Fan Control	OPTION
CH_{1-n}	Crankcase Heater		WP	Water Pressure Switch, Water Flow Switch	OPTION
$AR_{1-n,H,R}$	Auxiliary Relay		$PBSR_1$	Push Button Switch for Starting (REMOTE)	OPTION
PSH_{1-n}	High Pressure Switch	OFF: 2.74Mpa ON: Manual Reset	$PBSR_2$	Push Button Switch for Stoppage (REMOTE)	Field Supplied
Pd_{1-n}	High Pressure Sensor		RL	Pilot Lamp for Remote Indication (Unit Operation)	
Ps_{1-n}	Low Pressure Sensor		OL_{1-n}	Pilot Lamp for Remote Indication (Alarm)	
THM_i	Inlet Water Temperature Thermistor		CMP	Contactor for Pump	
$THM_{01,\ 02,03}$	Outlet Water Temperature Thermistor		TRP	Thermal Relay for Pump	
$THMr2_{\ 1-n}$	Cooler Inlet Refrigerant Thermistor		SVE_n	Solenoid Valve for Economizer	
$THMd_{\ 1-n}$	Discharge Gas Thermistor		PSW_n	Pressure Switch for Economizer	
PFC_{1-n}	Fuse holder for Compresor Motor	Or optional Circuit Breaker	EHF_{1-n}	Cooler Heater	
PFF_{1-n}	Fuse holder for Compresor Fan Motor	Or optional Circuit Breaker	$TF_{1,2,3,4,5}$	Transformers	
THM_a	Atmosphere Temperature Thermistor				

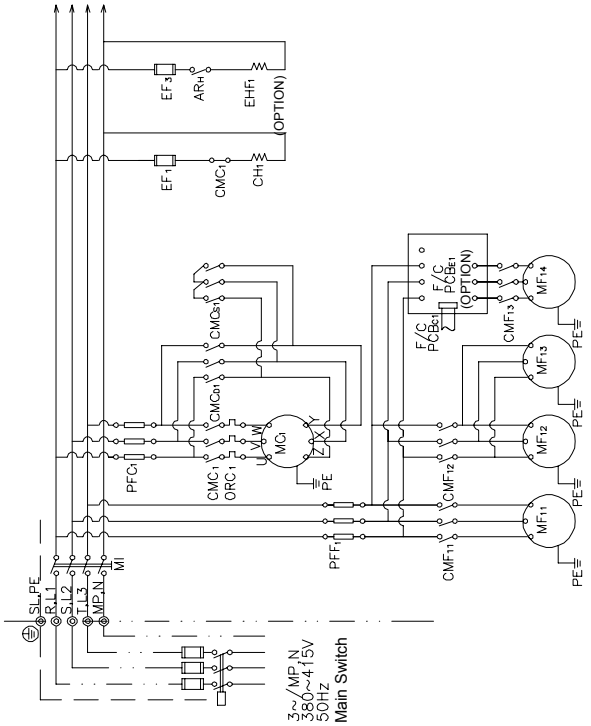
Model	N
RCUE 40, 50, 60, 70AG1	1
RCUE 80, 100, 120,140AG1	2
RCUE 150, 180, 200AG1	3
RCUE 240, 270AG1	4
RCUE 300,330AG1	5
RCUE 360,400AG1	6

2.2. WIRING DIAGRAM

2.2.1. POWER CIRCUIT

POWER CIRCUIT FOR RCUE 40AG1, RCUE 50AG1, RCUE 60AG1, RCUE 70AG1

Models
RCUE 40AG1
RCUE 50AG1
RCUE 60AG1
RCUE 70AG1

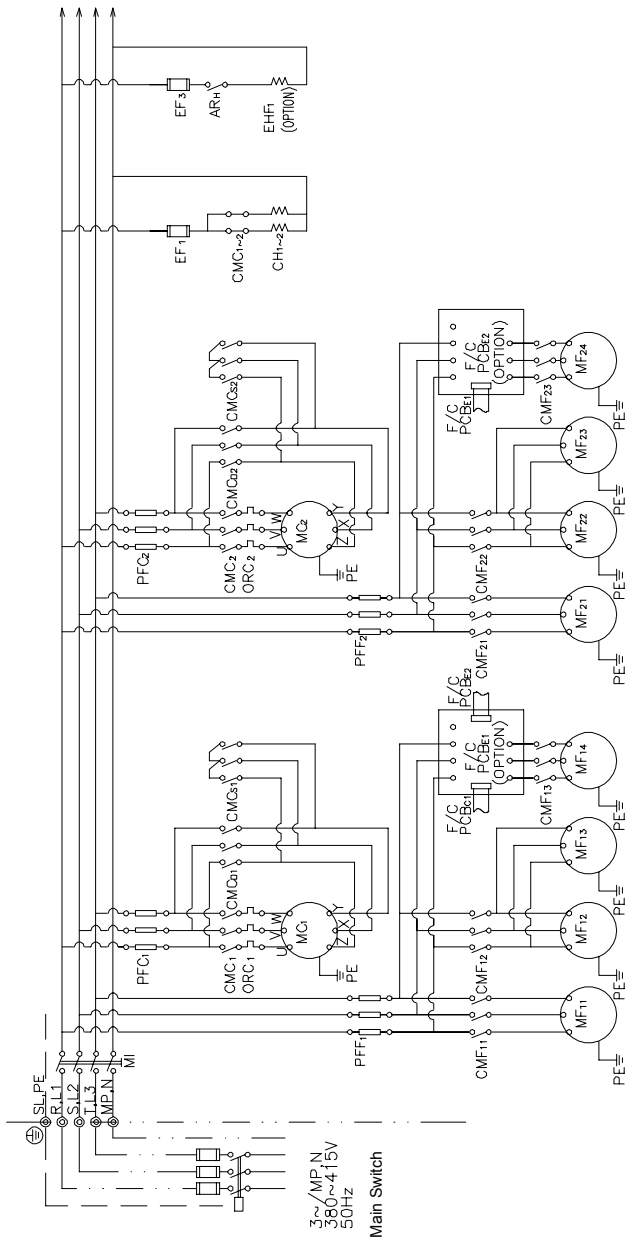


POWER CIRCUIT

XEKS0619

POWER CIRCUIT FOR RCUE 80AG1, RCUE 100AG1, RCUE 120AG1, RCUE 140AG1

Models
RCUE 80AG1
RCUE 100AG1
RCUE 120AG1
RCUE 140AG1

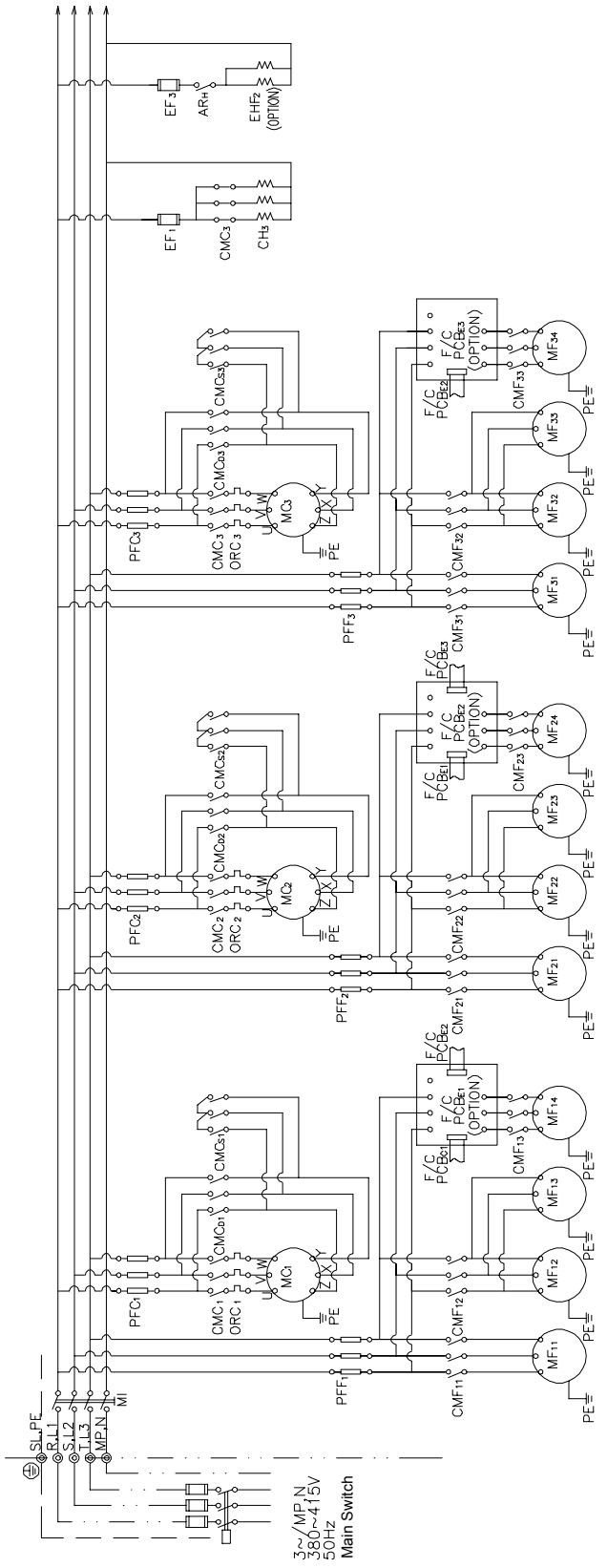


POWER CIRCUIT

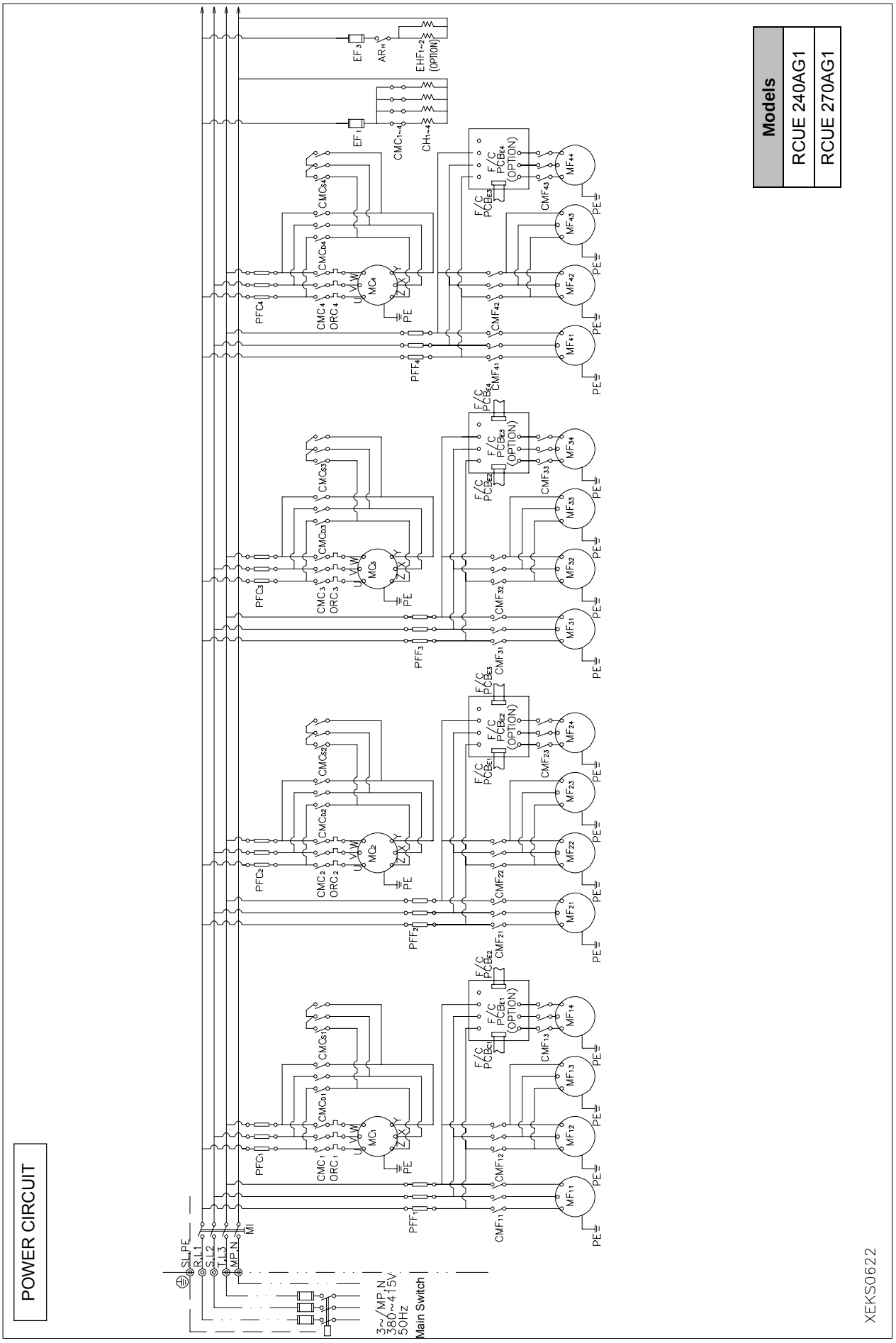
XEKS0620

POWER CIRCUIT FOR RCUE 150AG1, RCUE 180AG1, RCUE 200AG1

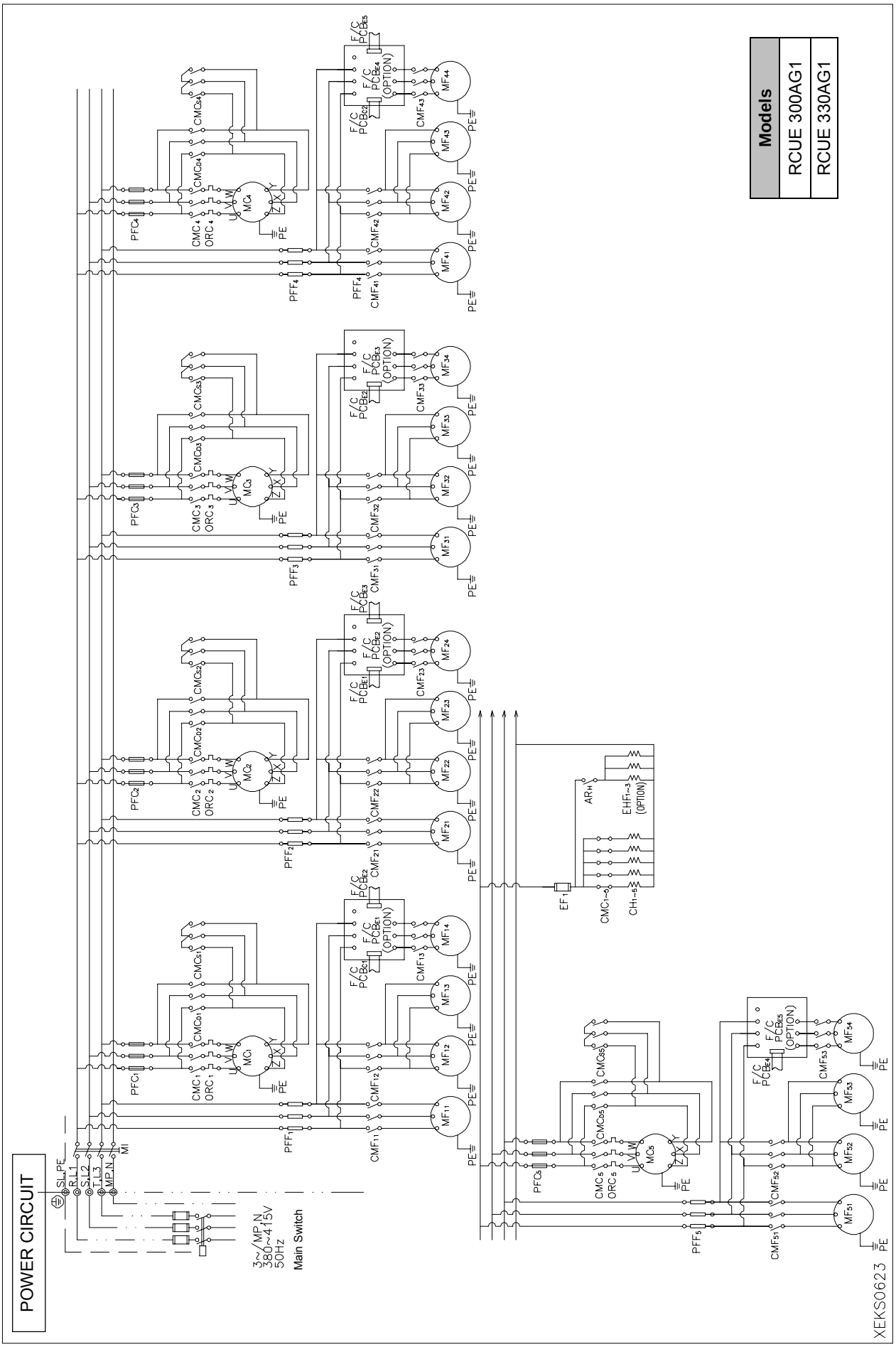
Models
RCUE 150AG1
RCUE 180AG1
RCUE 200AG1



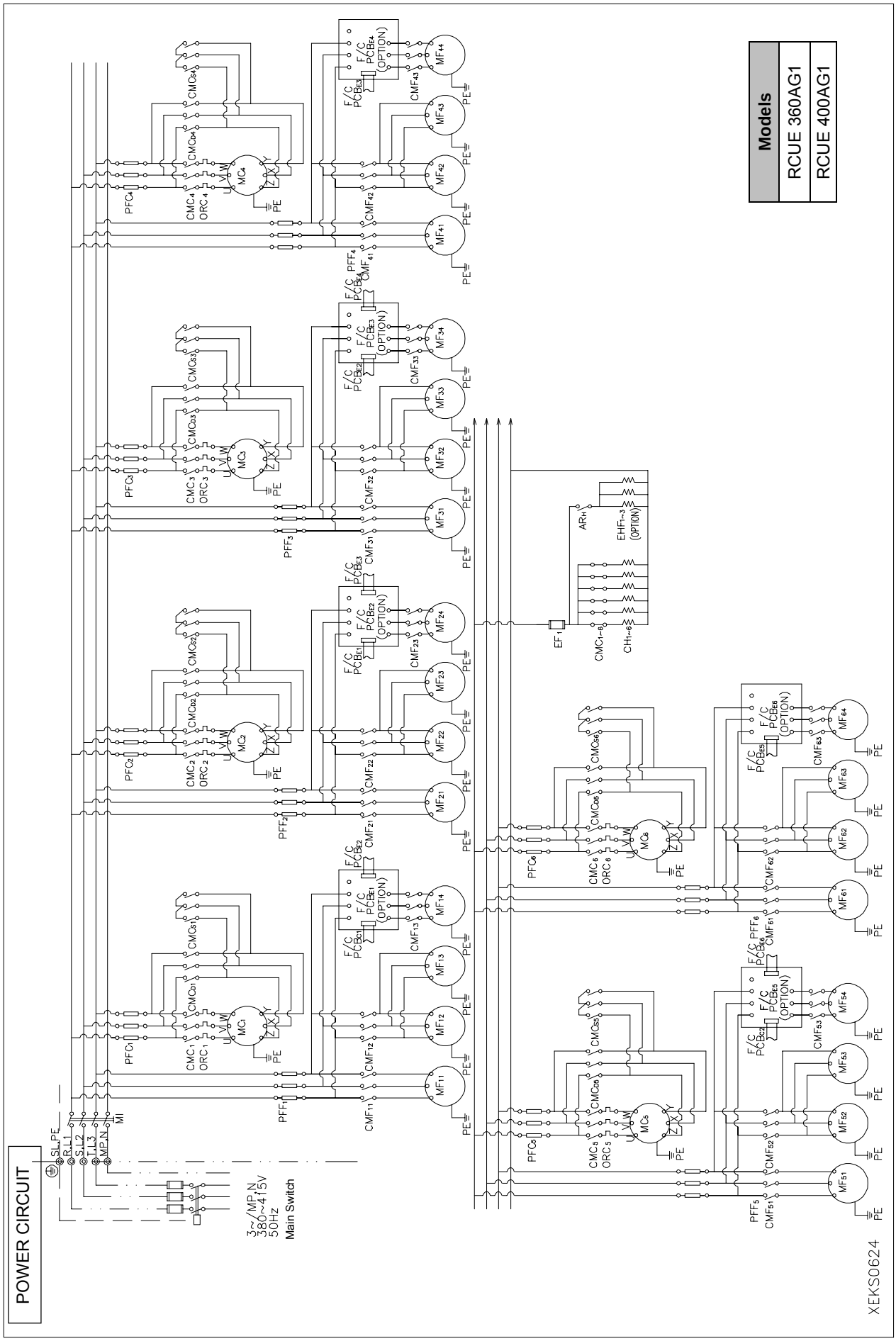
POWER CIRCUIT FOR RCUE 240AG1, RCUE 270AG1



POWER CIRCUIT FOR RCUE 300AG1, RCUE 330AG1



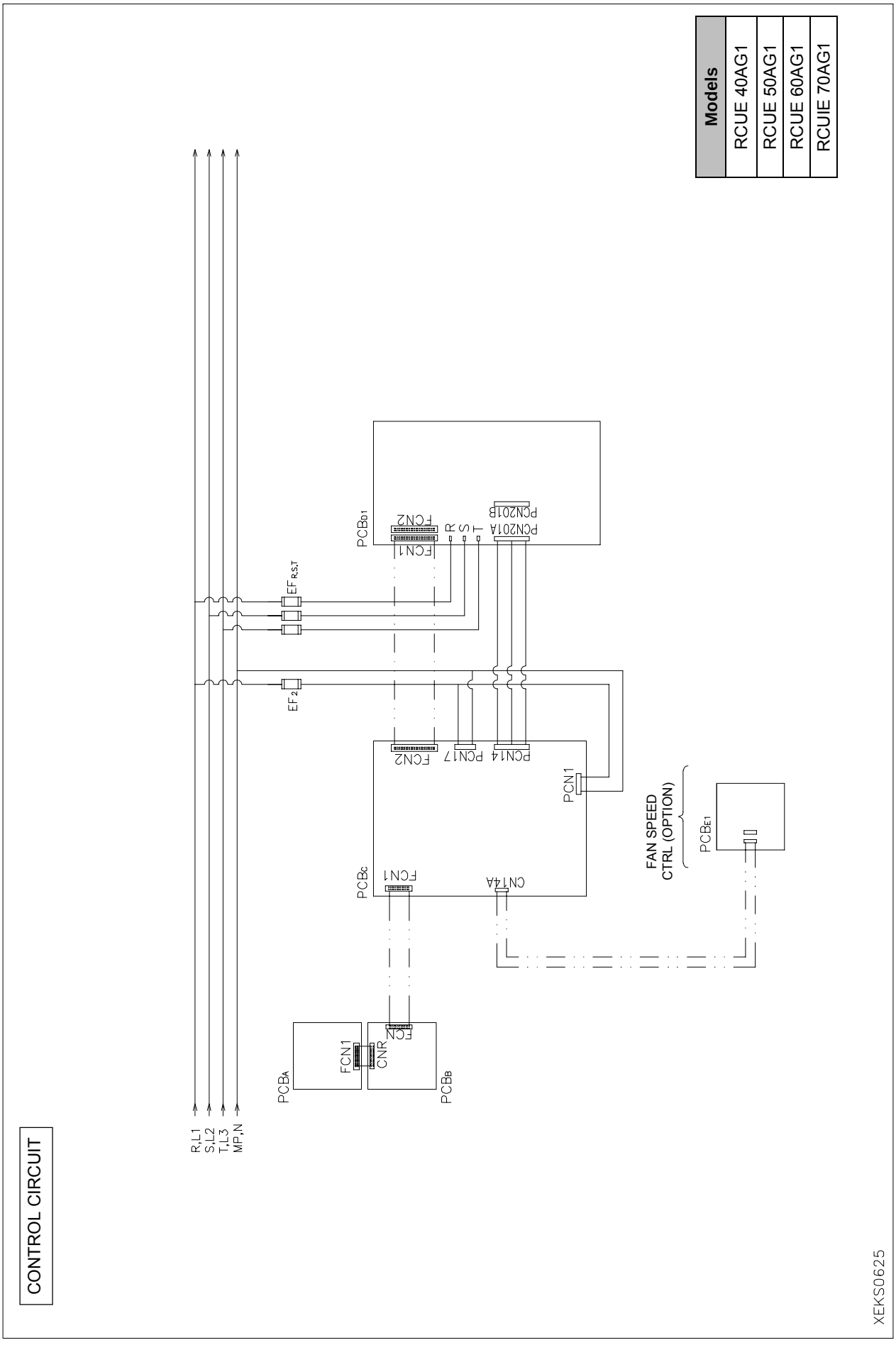
POWER CIRCUIT FOR RCUE 360AG1, RCUE 400AG1



2.2.2. CONTROL CIRCUIT

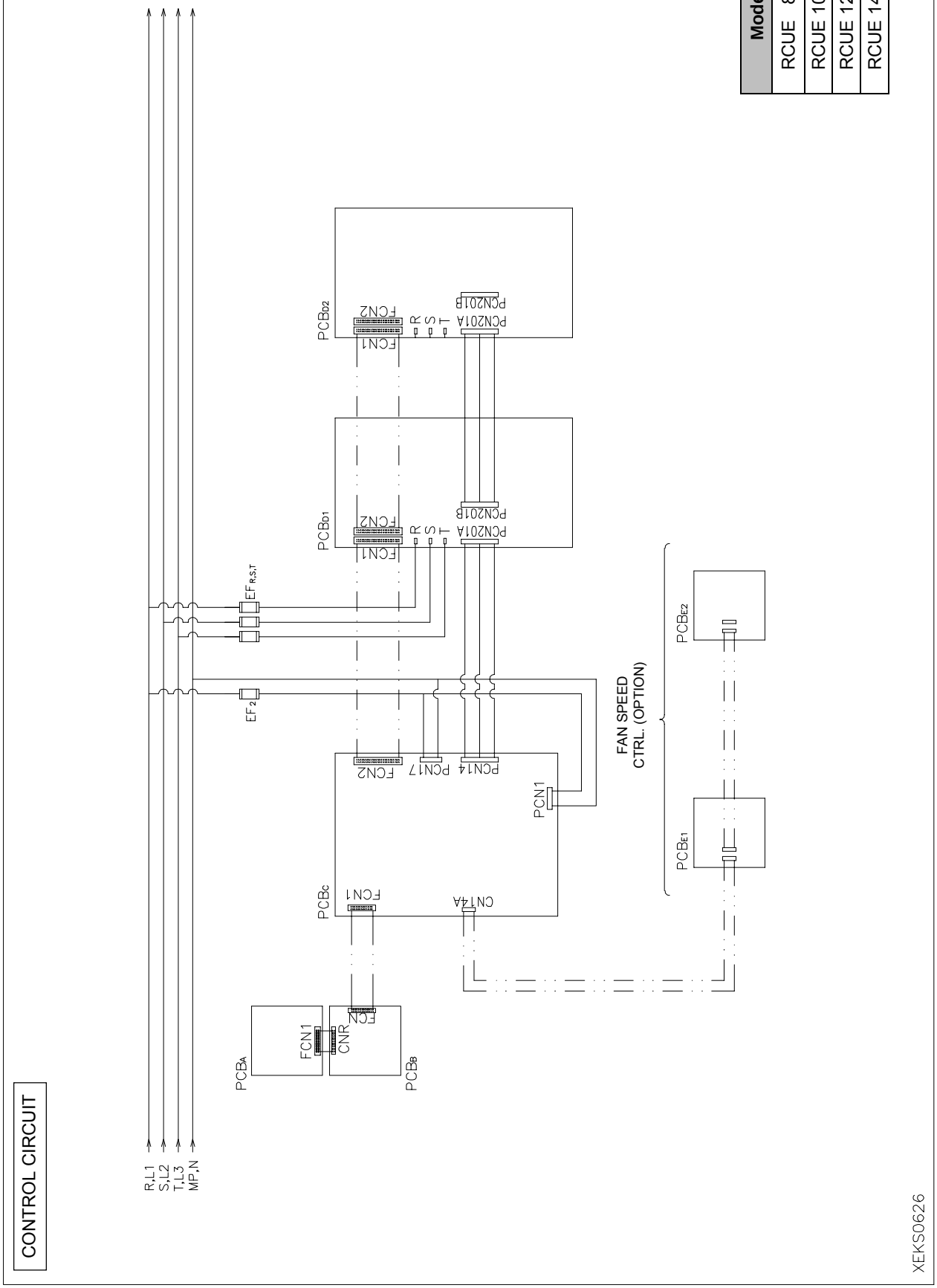
CONTROL CIRCUIT FOR RCUE 40AG1, RCUE 50AG1, RCUE 60AG1, RCUE 70AG1

Models
RCUE 40AG1
RCUE 50AG1
RCUE 60AG1
RCUIE 70AG1

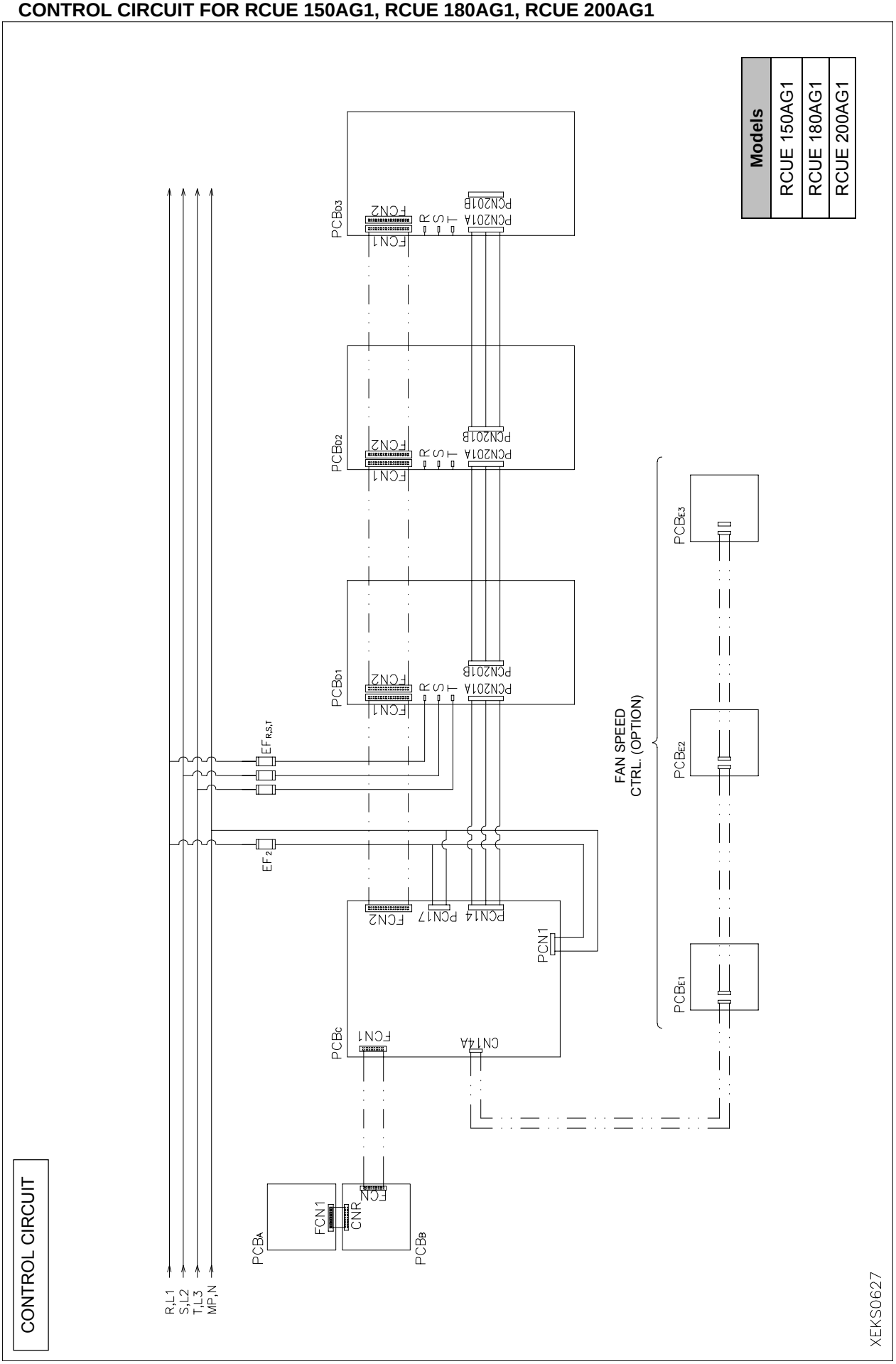


CONTROL CIRCUIT FOR RCUE 80AG1, RCUE 100AG1, RCUE 120AG1, RCUE 140AG1

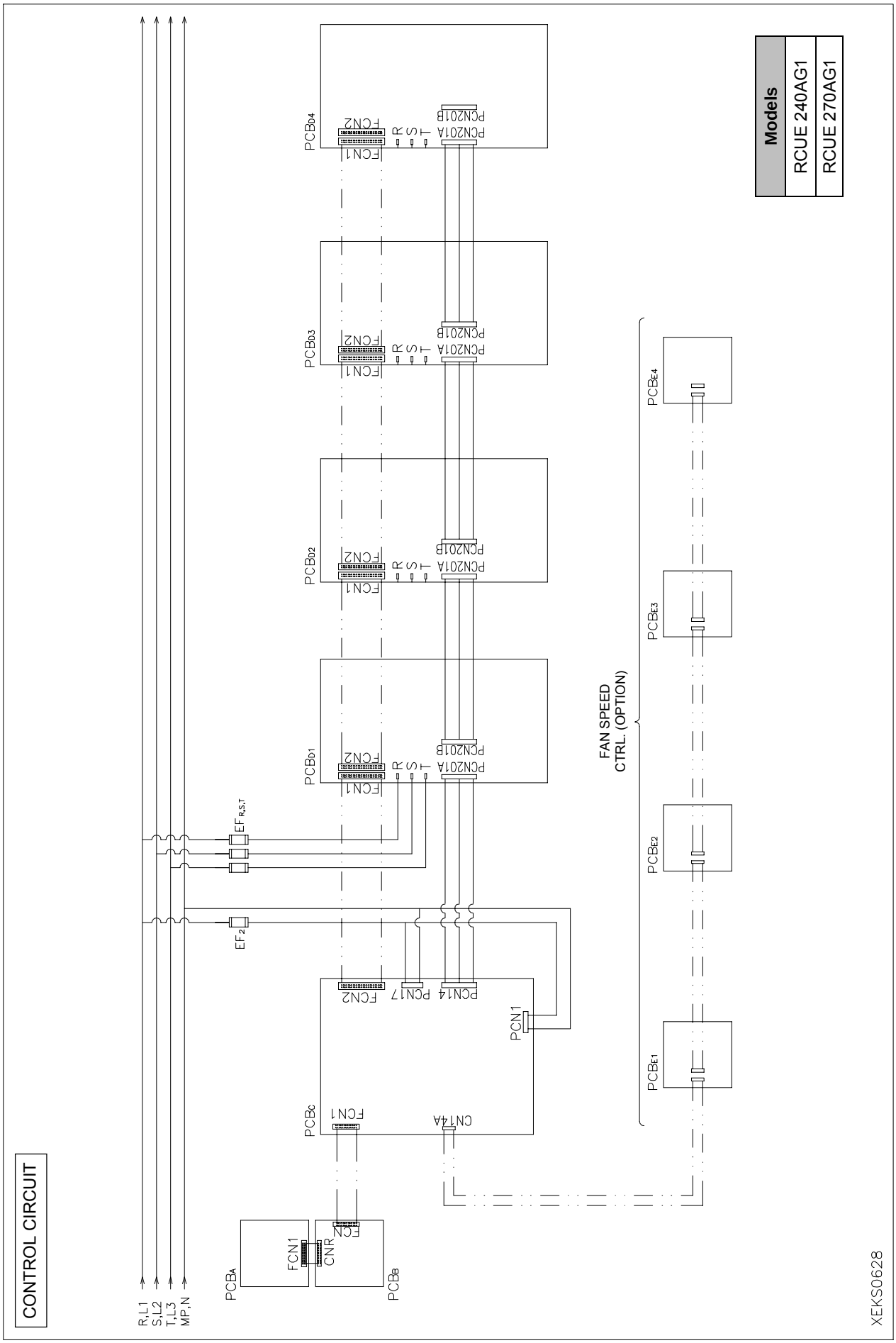
Models
RCUE 80AG1
RCUE 100AG1
RCUE 120AG1
RCUE 140AG1



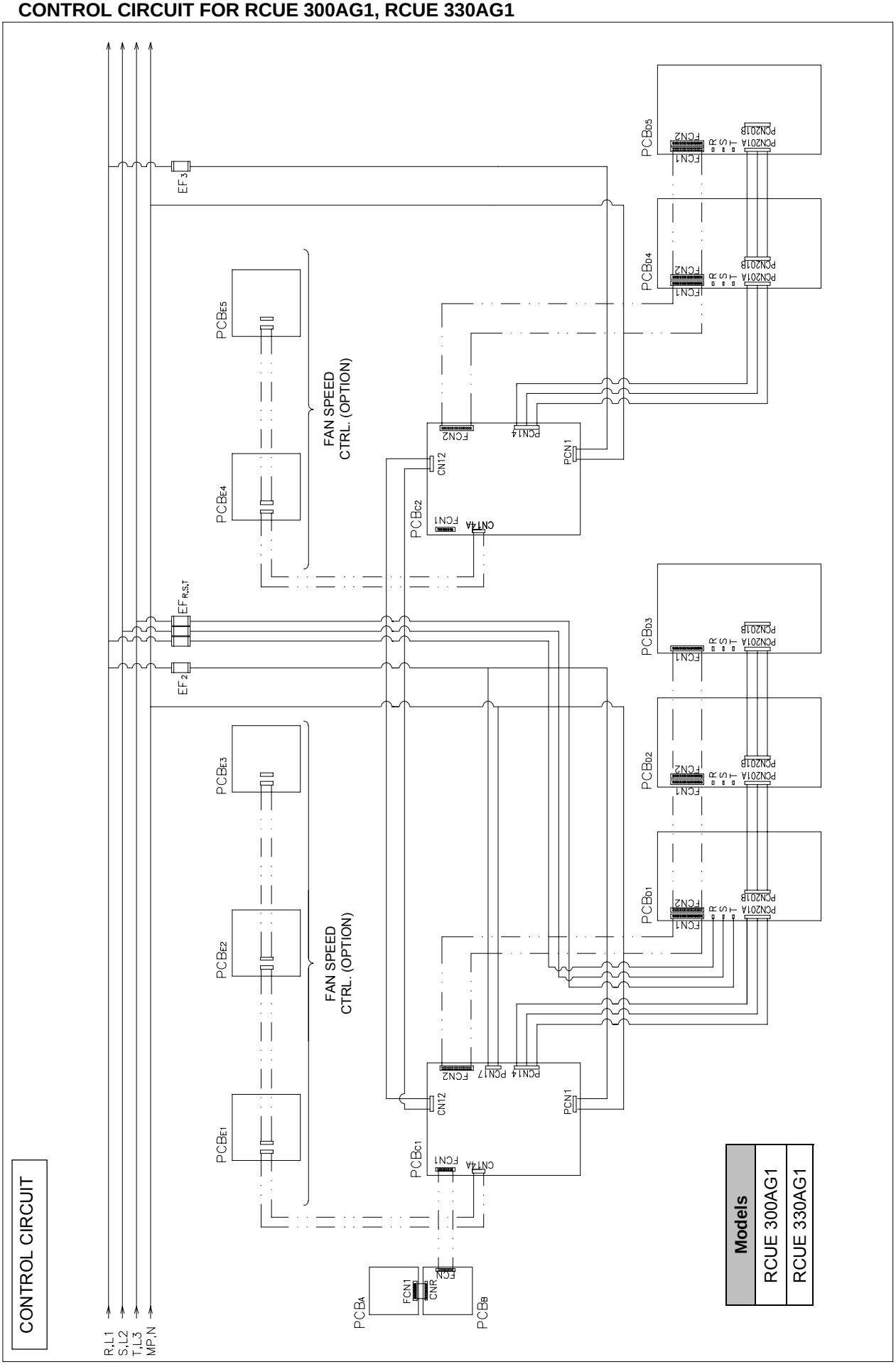
CONTROL CIRCUIT FOR RCUE 150AG1, RCUE 180AG1, RCUE 200AG1



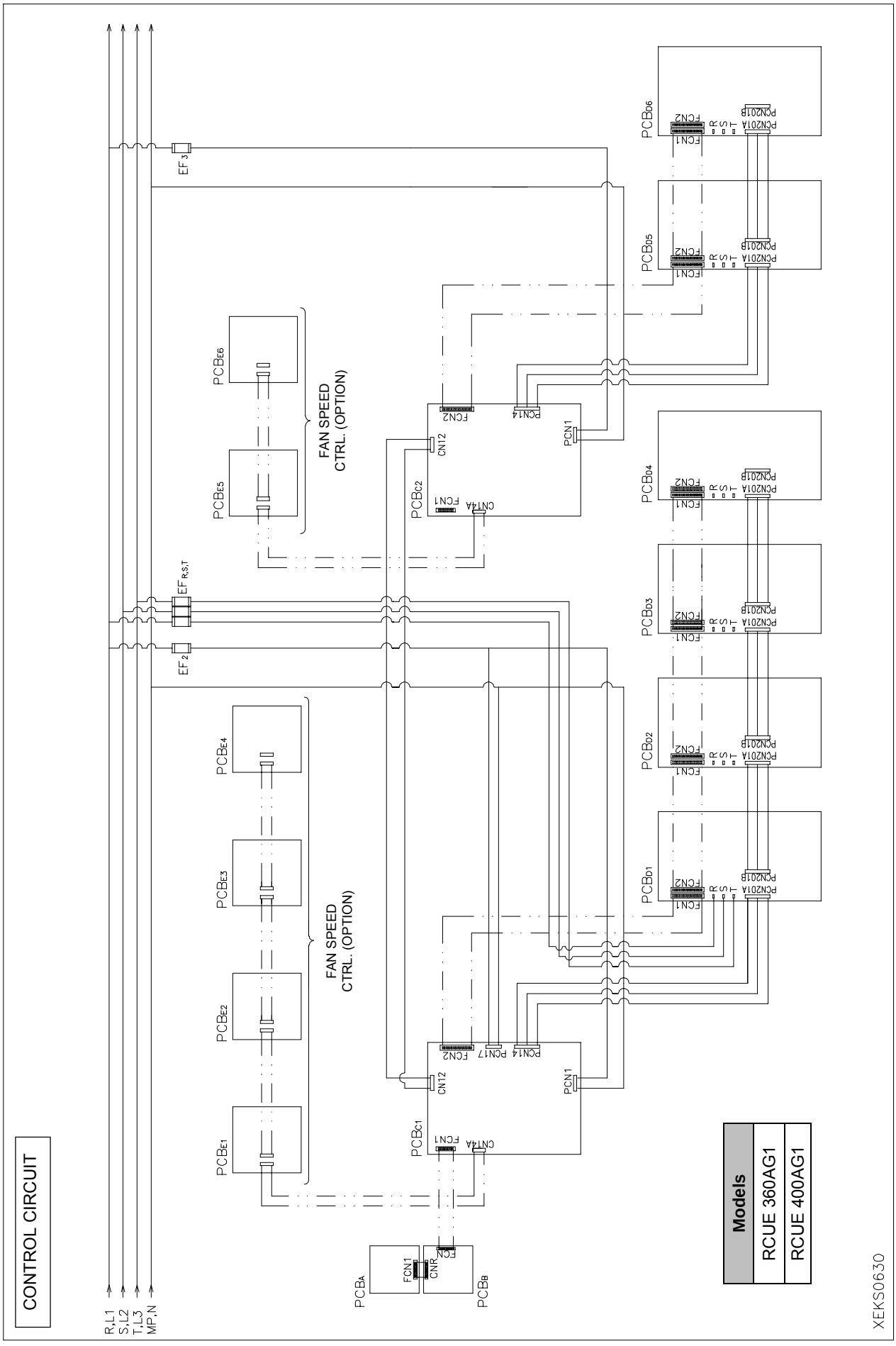
CONTROL CIRCUIT FOR RCUE 240AG1, RCUE 270AG1



CONTROL CIRCUIT FOR RCUE 300AG1, RCUE 330AG1

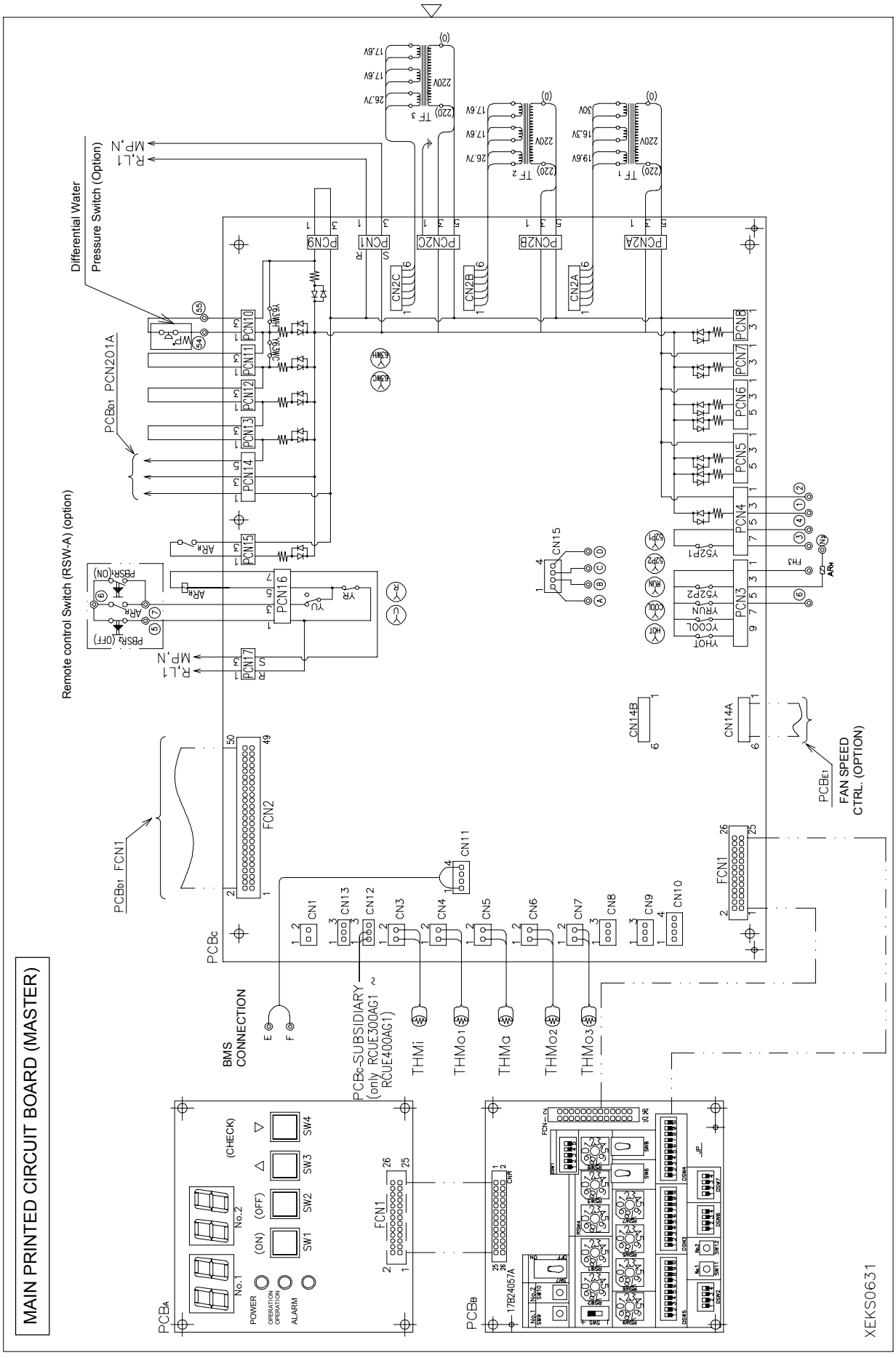


CONTROL CIRCUIT FOR RCUE 360AG1, RCUE 400AG1



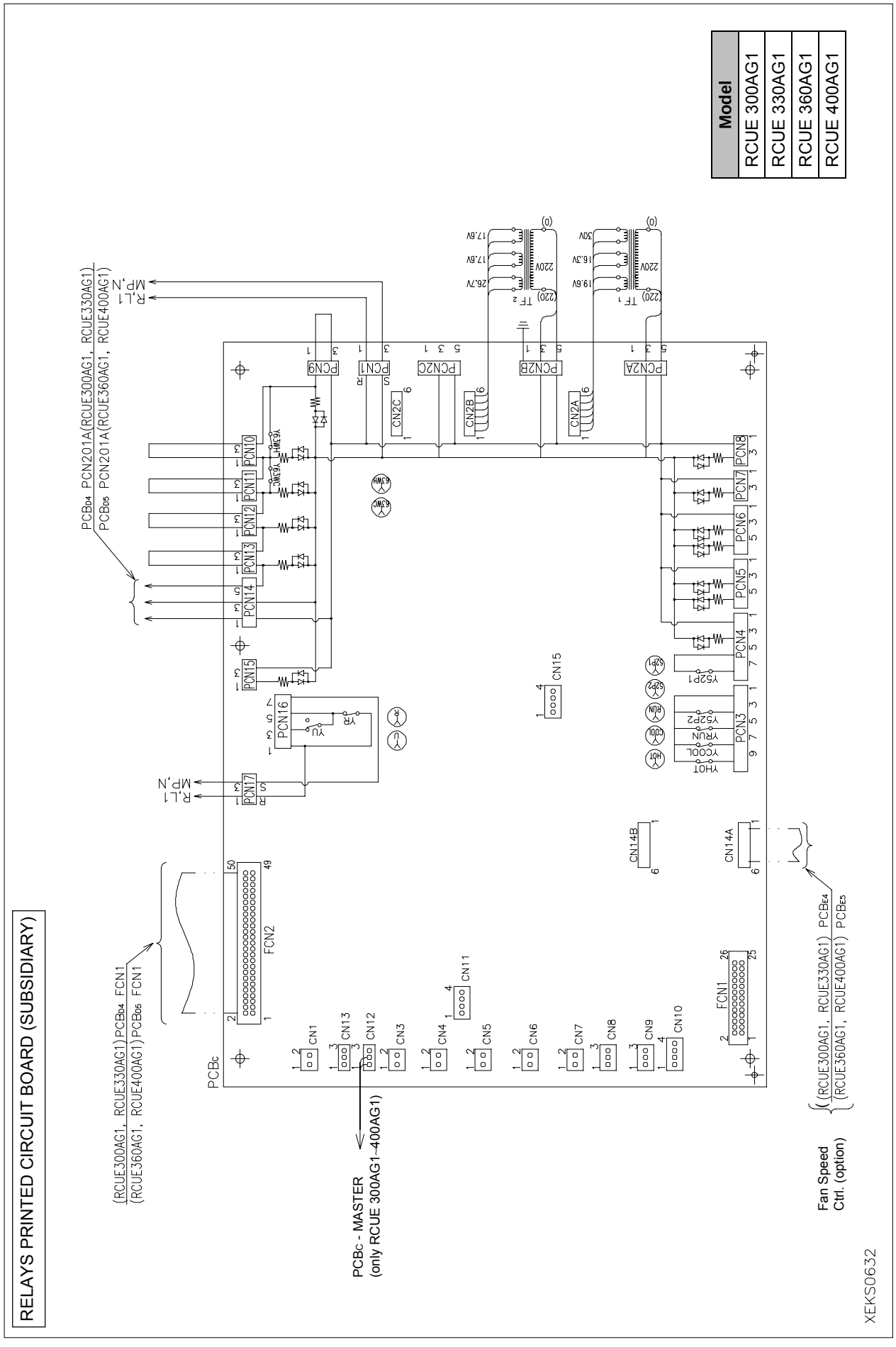
2.3. MAIN CIRCUIT BOARD

MAIN PRINTED CIRCUIT BOARD (MASTER)

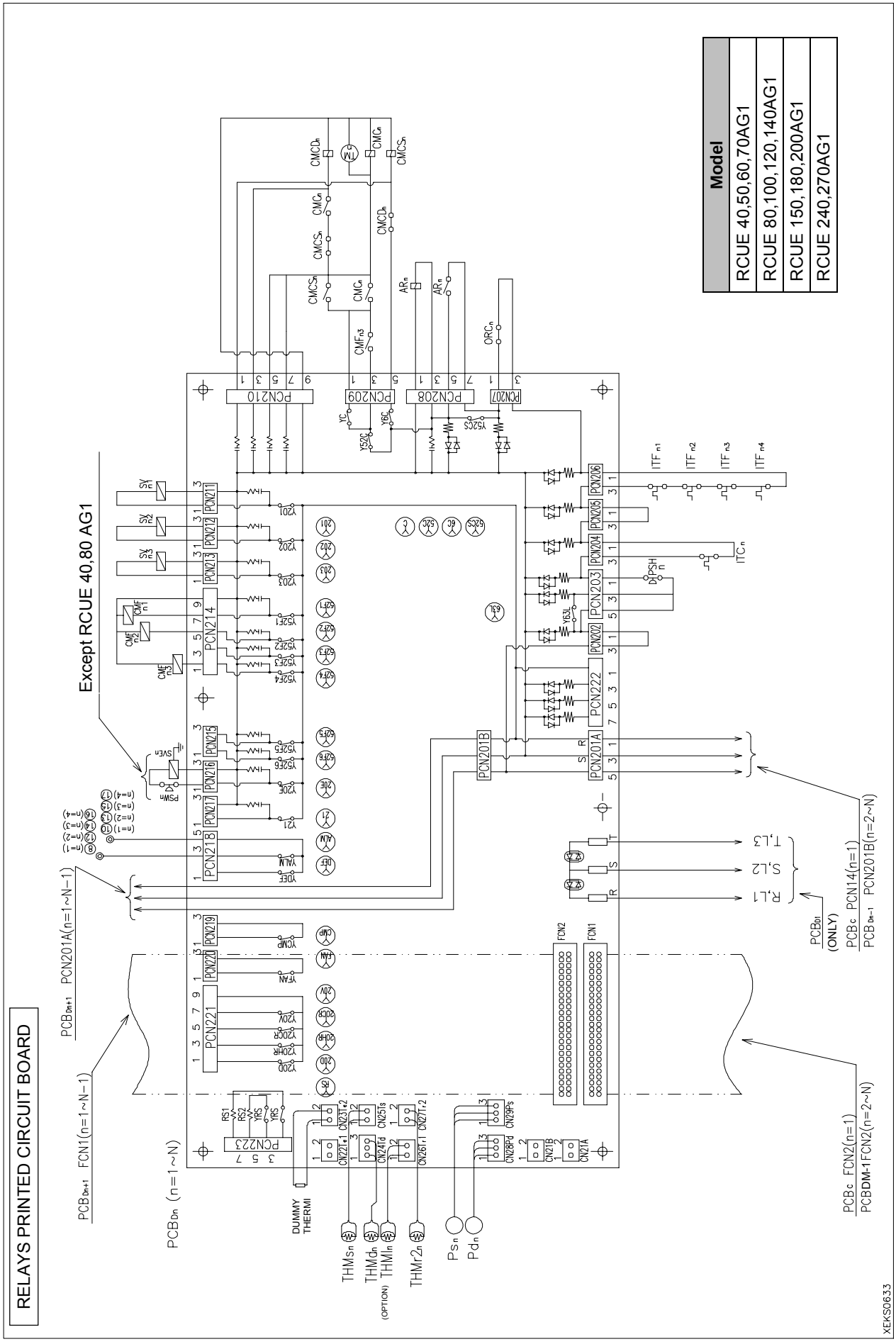


RELAIS PRINTED CIRCUIT BOARD (SUBSIDIARY)

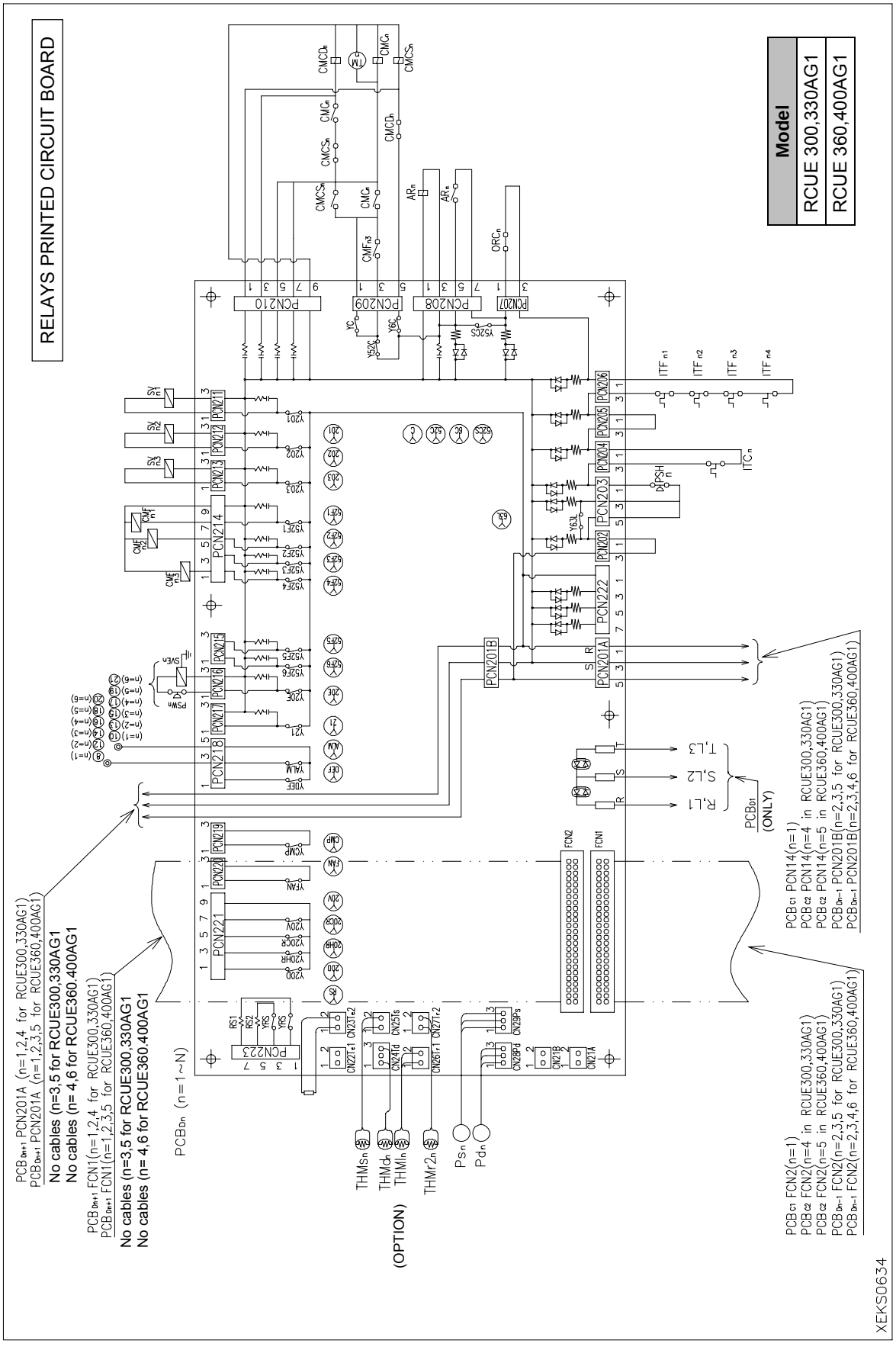
Model
RCUE 300AG1
RCUE 330AG1
RCUE 360AG1
RCUE 400AG1



RELAYS PRINTED CIRCUIT BOARD



RELAYS PRINTED CIRCUIT BOARD



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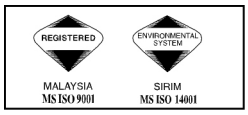

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SMGB0002-rev.0 - 07/05 - Printed in Spain