

Gebru:Ksaanwijzing

User manual



TYPES

SC150G (QD150G)
SC150SD (QD150SD)
SC215G (QD250G)
SC215SD (QD250SD)
SC315G (QD315G)
SC315SD (QD315SD)



BC2100 (QC21)
BC2100G (QC21G)
BC3100 (QC31)
BC3100G (QC31G)
BC4100 (QC41)
BC4100SD (QC41G)



KC2 (QK2)
KC4 (QK4)
KC6 (QK6)
KC8 (QK8)



KBC2 (QKB2)
KBC4 (QKB4)

Installation

1. The cabinet should not be placed in direct sunlight!
2. The cabinet should be installed on a level surface. When the cabinet is uneven, the door will not close properly.
3. After installation, leave the cabinet standing for at least two hours before switching on to avoid damaging the compressor.
4. Voltage: For the correct voltage please refer to the indication plate inside the cabinet.
5. For an optimum temperature, install the cabinet in a position where adequate air circulation is guaranteed. For: Lower energy costs, higher cooling capacity.
The guarantee will be void if the ventilation vents of the product are partly or wholly obstructed. An unrestricted circulation of air is essential to ensure optimal cooling performance and a long working life.
6. Do not cover the plate with air flow grills.
7. The temperature in the cabinet can be adjusted by the thermostat.
8. Automatic defrost is standard on the cabinet.
9. The ideal temperature is dependent upon the quality and temperature of the products to be cooled and is also affected by the ambient temperature.

Cleaning the condenser

The cooler is equipped with a low maintenance condenser that only requires cleaning in extreme circumstances. Under normal conditions this low maintenance condenser will extend the life of your cooler and reduce maintenance costs.

The cooler is equipped with a finned condenser. Clean the condenser, once a week, by means of a vacuum cleaner or a brush.

Filling the cabinet

When filling the cabinet please ensure that the products inside do not obstruct the air outlet or fan inlets, as this will reduce the circulation of cold air.

- Re-fill the cabinet in the evening to allow maximum cooling time before serving.
- Ensure that stock is rotated efficiently.
- To ensure maximum cooling time replenish stocks regularly rather than once a day.

Warning!

For all actions in machinery or electric parts: ensure the plug is disconnected from the mains.

It is possible that sharp parts appear in the engine room. Be careful if you have to do operations in the engine room. It is possible that part in the engine room are very hot(100°C)

Convince yourself that all parts are chilled enough before you do operation in the engine room.

Always mount eventual removed grids and/or other parts on the same place as before.

Maintenance

The cabinet should be cleaned with look-warm water and a mild domestic cleaner, never use abrasives or harsh chemicals.

Trouble shooting

Always check first whether the cabinet is properly plugged in and whether the socket is live (e.g. by plugging in a difference electrical appliance)

The temperature is too high (increases), with correctly set thermostat.

- Possible causes
1. No power supply to cabinets
 2. Airflow completely blocked
 3. Door is not properly closed
 4. The airflow trenches are covered
 5. Evaporator is frozen up
 6. Condenser is blocked
 7. Faulty thermostat
 8. Faulty fan motor
 9. Faulty compressor

- Solution
1. Check/Repair power supply
 2. Check the airflow is not obstructed
 3. Close Door(s)
 4. Clear the air flow trenches
 5. Switch off the cabinet to allow the evaporator to defrost
 6. Clean the condenser
 7. Contact your supplier
 8. Contact your supplier
 9. Contact your supplier

The temperature is too low(decreases), with correctly set thermostat

Possible Cause Thermostat is out of order

Solution Contact your supplier

TECHNICAL DATA

MODEL	SC150G (QD150G)	SC250G (QD250G)	SC315G (QD315G)	SC150SD (QD150SD)	SC250SD (QD250SD)	SC315SD (QD315SD)
EXTERNAL DIMENSION W×D×H(MM)	602X535X920	920X535X920	602X535X920	1350X535X920	920X535X920	1350X535X920
NET CAPACITY(L)	140	223	335	140	223	335
CABINET TEMP. (°C)	0°C—10°C	0°C—10°C	0°C—10°C	0°C—10°C	0°C—10°C	0°C—10°C
MAX AMBIENT TEMPERATURE (°C)	32	32	32	32	32	32
REFRIGERANT/(g)	R134a/130	R134a/130	R134a/130	R134a/130	R134a/130	R134a/130
DEFROST PER DAY NO.	4	4	4	4	4	4
MAX DEFROST LENGTH MINUTES	20	20	20	20	20	20
DEFROST METHOD	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW
POWER SUPPLY	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ
NET WEIGHT (Kg)	54	75	95	52	72	91
MAX CURRENT (A)	1.8	1.8	1.8	1.8	1.8	1.8
MAX POWER (W)	250	250	250	250	250	250

TECHNICAL DATA

MODEL	BC2100 G (QC21G)	BC3100G (QC31G)	BC4100G (QC41G)	BC2100 (QC21)	BC3100 (QC31)	BC4100 (QC41)
EXTERNAL DIMENSION W×D×H(MM)	1462X513x860	2002X513x860	2542X513x860	1462X513x860	2002X513x860	2542X513x860
NET CAPACITY(L)	290	460	630	290	460	630
CABINET TEMP. (°C)	0°C—10°C	0°C—10°C	0°C—10°C	0°C—10°C	0°C—10°C	0°C—10°C
MAX AMBIENT TEMPERATURE (°C)	32	32	32	32	32	32
REFRIGERANT/(g)	R134a/150	R134a/160	R134a/190	R134a/150	R134a/160	R134a/190
DEFROST PER DAY NO.	4	4	4	4	4	4
MAX DEFROST LENGTH MINUTES	20	20	20	20	20	20
DEFROST METHOD	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW
POWER SUPPLY	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ
NET WEIGHT (Kg)	100	125	150	89	106	123
MAX CURRENT (A)	1.8	1.8	2.5	1.8	1.8	2.5
MAX POWER (W)	250	250	300	250	250	300

TECHNICAL DATA

MODEL	KC2 (QK2)	KC4 (QK4)	KC6 (QK6)	KC8 (QK8)	KBC2 (QKB2)	KBC4 (QKB4)
EXTERNAL DIMENSION W×D×H(MM)	555X590X860	880X590X860	1110X590X860	1350X590X860	555X566X860	1110X566X860
NET CAPACITY(L)	2PCS KEGS	4PCS KEGS	6PCS KEGS	8PCS KEGS	2PCS KEGS	4PCS KEGS
CABINET TEMP. (℃)	0℃——10℃	0℃——10℃	0℃——10℃	0℃——10℃	0℃——10℃	0℃——10℃
MAX AMBIENT TEMPERATURE (℃)	32	32	32	32	32	32
REFRIGERANT/(g)	R134a/130	R134a/200	R134a/200	R134a/200	R134a/130	R134a/130
DEFROST PER DAY NO.	4	4	4	4	4	4
MAX DEFROST LENGTH MINUTES	20	20	20	20	20	20
DEFROST METHOD	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW	AIRFLOW
DEFROST HEATING ELEMENT (KW)	-----	-----	-----	-----	-----	-----
POWER SUPPLY	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ	230V/50HZ
NET WEIGHT (Kg)	48	63	70	83	43	73
MAX CURRENT (A)	1.8	1.8	1.8	1.8	1.8	1.8
MAX POWER (W)	250	250	250	250	250	250

**DIGITAL CONTROLLER
XR02CX**

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2. GENERAL WARNINGS

PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.

SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell S.p.A." (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

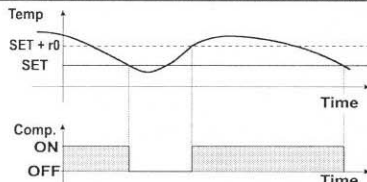
3. GENERAL DESCRIPTION

Model XR02CX, format 32 x 74 x 50 mm, is a digital thermostat with off cycle defrost designed for refrigeration applications at normal temperature. It provides a relay output to drive the compressor. It is also provided with 2 NTC probe input. The instrument is fully configurable through special parameters that can be easily programmed through the keyboard or the by HOTKEY.

4. REGULATION

THE REGULATION OUTPUT

The regulation is performed according to the temperature measured by the thermostat probe with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.



In case of fault in the thermostat probe the start and stop of the compressor are timed through parameters "Cy" and "Cn".

5. DEFROST

Defrost is performed through a simple stop of the compressor. Parameter "id" controls the interval between defrost cycles, while its length is controlled by parameter "Md".

6. FRONT PANEL COMMANDS



SET

To display target set point, in programming mode it selects a parameter or confirm an operation



To start a manual defrost



In programming mode it browses the parameter codes or increases the displayed value



In programming mode it browses the parameter codes or decreases the displayed value

KEYS COMBINATION

- To lock or unlock the keyboard
- To enter in programming mode
- To return to room temperature display

LED	MODO	SIGNIFICATO
	On	Compressore enabled
	Flashing	Anti short cycle delay enabled (AC parameter)
	On	Defrost in progress

°C	Flashing	Dripping in progress
	On	Measurement unit
°F	Flashing	Programming mode
	On	Measurement unit
	Flashing	Programming mode

HOW TO SEE THE SET POINT

- Push and immediately release the SET key, the set point will be showed;
- Push and immediately release the SET key or wait about 5s to return to normal visualisation.

HOW TO CHANGE THE SETPOINT

- Push the SET key for more than 2 seconds to change the Set point value;
- The value of the set point will be displayed and the °C or °F LED starts blinking;
- To change the Set value push the o or n arrows within 10s.
- To memorise the new set point value push the SET key again or wait 10s.

HOW TO START A MANUAL DEFROST (ONLY XR02CX)

Push the DEF key for more than 2 seconds and a manual defrost will start

HOW TO CHANGE A PARAMETER VALUE

To change the parameter's value operate as follows:

- Enter the Programming mode by pressing the SET+ keys for 3s (°C or °F LED starts blinking).
- Select the required parameter. Press the "SET" key to display its value
- Use or to change its value.
- Press "SET" to store the new value and move to the following parameter.

To exit: Press SET+ or wait 15s without pressing a key.

NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

HIDDEN MENU

The hidden menu includes all the parameters of the instrument.

HOW TO ENTER THE HIDDEN MENU

- Enter the Programming mode by pressing the SET+ keys for 3s (°C or °F LED starts blinking).
- Released the keys, then push again the SET+ keys for more than 7s. The L2 label will be displayed immediately followed from the Hy parameter.

NOW YOU ARE IN THE HIDDEN MENU.

- Select the required parameter.
- Press the "SET" key to display its value
- Use or to change its value.
- Press "SET" to store the new value and move to the following parameter.

To exit: Press SET+ or wait 15s without pressing a key.

NOTE1: if none parameter is present in L1, after 3s the "nP" message is displayed. Keep the keys pushed till the L2 message is displayed.

NOTE2: the set value is stored even when the procedure is exited by waiting the time-out to expire.

HOW TO MOVE A PARAMETER FROM THE HIDDEN MENU TO THE FIRST LEVEL AND VICEVERSA.

Each parameter present in the HIDDEN MENU can be removed or put into "THE FIRST LEVEL" (user level) by pressing SET+ . In HIDDEN MENU when a parameter is present in First Level the decimal point is on.

TO LOCK THE KEYBOARD

- Keep pressed for more than 3s the and keys.
- The "OF" message will be displayed and the keyboard will be locked. If a key is pressed more than 3s the "OF" message will be displayed.

TO UNLOCK THE KEYBOARD

Keep pressed together for more than 3s the and keys till the "on" message will be displayed.

7. PARAMETERS

REGULATION

- Hy Differential:** (0,1°C + 25°C) Intervention differential for set point. Compressor Cut IN is SET POINT + differential (Hy). Compressor Cut OUT is when the temperature reaches the set point.
- LS Minimum SET POINT:** (-55°C+SET/-58°F+SET): Sets the minimum value for the set point.
- US Maximum SET POINT:** (SET+99°C/ SET+99°F). Set the maximum value for set point.
- oT First probe calibration:** (-9.9+9.9°C) allows to adjust possible offset of the first probe.
- P2 Evaporator probe presence:** n= not present; y= the defrost stops by temperature.
- oE Second probe calibration:** (-9.9+9.9°C) allows to adjust possible offset of the second probe
- od Outputs activation delay at start up:** (0+99min) This function is enabled at the initial start up of the instrument and inhibits any output activation for the period of time set in the parameter.
- AC Anti-short cycle delay:** (0+50 min) minimum interval between the compressor stop and the following restart.
- Cy Compressor ON time with faulty probe:** (0+99 min) time during which the compressor is active in case of faulty thermostat probe. With Cy=0 compressor is always OFF.
- Cn Compressor OFF time with faulty probe:** (0+99 min) time during which the compressor is OFF in case of faulty thermostat probe. With Cn=0 compressor is always active.

DISPLAY

- CF Measurement unit:** (°C+°F) °C=Celsius; °F=Fahrenheit. **WARNING:** When the measurement unit is changed the SET point and the values of the parameters Hy, LS, US, oE, o1, AU, AL have to be checked and modified if necessary).
- rE Resolution (only for °C):**(dE + in) dE= decimal between -9.9 and 9.9°C; in= integer;
- Ld Default display:** (P1 + P2) P1= thermostat probe; P2= evaporator probe. SP=Set point
- dy Display delay:** (0+15 min.) when the temperature increases, the display is updated of 1 °C/1°F after this time.

DEFROST

- dE Defrost termination temperature:** (-50+50°C) if oE=Y it sets the temperature measured by the evaporator probe, which causes the end of defrost.
- id Interval between defrost cycles:** (0+99 ore) Determines the time interval between the beginning of two defrost cycles.

- Md** Maximum length for defrost: (0+99 min. with 0 no defrost) when $ot=n$, (not evaporator probe: timed defrost) it sets the defrost duration, when $ot=y$ (defrost end based on temperature) it sets the maximum length for defrost.
- dF** Display during defrost: (rt / it / St / dF) rt= real temperature; it= start defrost temperature; St= SET-POINT; dF= label dF.

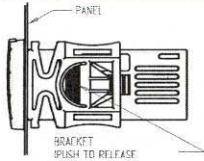
ALARMS

- AU** Maximum temperature alarm: (AL+99°C) when this temperature is reached the alarm is enabled, after the "Ad" delay time.
- AL** Minimum temperature alarm: (-55+AU°C) when this temperature is reached the alarm is enabled, after the "Ad" delay time.
- Ad** Temperature alarm delay: (0+99 min) time interval between the detection of an alarm condition and alarm signalling.
- dA** Exclusion of temperature alarm at startup: (0+99 min) time interval between the detection of the temperature alarm condition after instrument power on and alarm signalling.

OTHER

- d2** Evaporator probe display (read only)
- Pt** Parameter code table
- rL** Software release

8. INSTALLATION AND MOUNTING



Instrument XR02CX shall be mounted on vertical panel, in a 29x71 mm hole, and fixed using the special bracket supplied. The temperature range allowed for correct operation is 0+60 °C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let air circulate by the cooling holes.

9. ELECTRICAL CONNECTIONS

The instrument is provided with screw terminal block to connect cables with a cross section up to 2,5 mm². Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the probe cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.

9.1 PROBES

The probes shall be mounted with the bulb upwards to prevent damages due to casual liquid infiltration. It is recommended to place the thermostat probe away from air streams to correctly measure the average room temperature. Place the defrost termination probe among the evaporator fins in the coldest place, where most ice is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

10. HOW TO USE THE HOT KEY

10.1 HOW TO PROGRAM THE HOT KEY FROM THE INSTRUMENT (UPLOAD)

- Program one controller with the front keypad.
- When the controller is ON, insert the "Hot key" and push Δ key; the "uP" message appears followed by flashing "En"
- Push "SET" key and the "En" will stop flashing.
- Turn OFF the instrument remove the "Hot Key", then turn it ON again.

NOTE: the "Er" message is displayed for failed programming. In this case push again o key if you want to restart the upload again or remove the "Hot key" to abort the operation.

10.2 HOW TO PROGRAM AN INSTRUMENT USING HOT KEY (DOWNLOAD)

- Turn OFF the instrument.
- Insert a programmed "Hot Key" into the 5 PIN receptacle and then turn the Controller ON.
- Automatically the parameter list of the "Hot Key" is downloaded into the Controller memory, the "do" message is blinking followed by flashing "En".
- After 10 seconds the instrument will restart working with the new parameters.
- Remove the "Hot Key".

NOTE: the "Er" message is displayed for failed programming. In this case push again o key if you want to restart the upload again or remove the "Hot key" to abort the operation.

11. ALARM SIGNALLING

Mess.	Cause	Outputs
"P1"	Room probe failure	Compressor output according to "Cy" e "Cn"
"P2"	Evaporator probe failure	Defrost end is timed
"HA"	Maximum temperature alarm	Outputs unchanged
"LA"	Minimum temperature alarm	Outputs unchanged
"EA"	External alarm	Outputs unchanged
"CA"	Serious external alarm	All outputs OFF.
"dA"	Door Open	Compressor and fans restarts

11.1 ALARM RECOVERY

Probe alarms "P1" and "P2" start some seconds after the fault in the related probe; they automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the probe. Temperature alarms "HA" and "LA" automatically stop as soon as the temperature returns to normal values.

Alarms "EA" and "CA" (with iF=bL) recover as soon as the digital input is disabled.

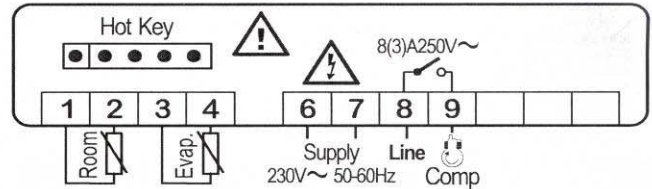
12. TECHNICAL DATA

Housing: self extinguishing ABS.
 Case: frontal 32x74 mm; depth 60mm;
 Mounting: panel mounting in a 71x29mm panel cut-out
 Protection: IP20; Frontal protection: IP65
 Connections: Screw terminal block $\leq 2,5$ mm² wiring.
 Power supply: according to the model 230Vac $\pm 10\%$, 50/60Hz, 110Vac $\pm 10\%$, 50/60Hz
 Power absorption: 3VA max

Display: 2 digits, red LED, 14,2 mm high; Inputs: 2 NTC.
 Relay outputs: compressor SPST 8(3) A, 250Vac; 20(8)A 250Vac
 Data storing: on the non-volatile memory (EEPROM).
 Kind of action: 1B; Pollution grade: 2; Software class: A.;
 Rated impulsive voltage: 2500V; Overvoltage Category: II
 Operating temperature: 0+60 °C; Storage temperature: -30+85 °C.
 Relative humidity: 20+85% (no condensing)
 Measuring and regulation range: NTC -40+110°C (-40+230°F);
 Resolution: 0,1 °C or 1°C or 1 °F (selectable); Accuracy (ambient temp. 25°C): $\pm 0,7$ °C ± 1 digit

13. CONNECTIONS

13.1 XR02CX - 20A OR 8A



NOTE: The compressor relay is 20(8)A or 8(3)A depending on the model.

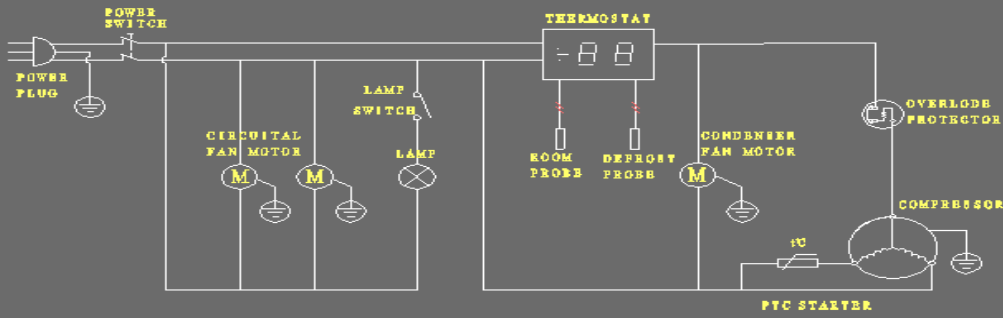
14. DEFAULT SETTING VALUES

LBL	DESCRIPTION	RANGE	DEFAULT	LEVEL
REGULATION				
Hy	Differential	0.1 + 25°C/1 + 45°F	2.0 °C	L1
LS	Minimum Set Point	-55°C+SET/-67°F+SET	-50 °C	L2
US	Maximum Set Point	SET+99°C/ SET+210°F	99 °C	L2
ot	First probe calibration	-9.9+9.9°C/-18+18°F	0.0	L1
P2	Second probe presence	n - Y	y	L1
oE	Second probe calibration	-9.9+9.9°C/-18+18°F	0.0	L2
od	Outputs activation delay at start up	0 + 99 min	0	L2
AC	Anti-short cycle delay	0 + 50 min	1	L1
Cy	Compressor ON time faulty probe	0 + 99 min	15	L2
Cn	Compressor OFF time faulty probe	0 + 99 min	30	L2
DISPLAY				
CF	Measurement units	°C - °F	°C	L2
rE	Resolution (only for °C)	dE - in	dE	L1
Ld	Default Display	P1 - P2 - SP	P1	L2
dy	Display delay	0 + 15 min	0	L1
DEFROST				
dE	Defrost termination temperature	-50+50°C/-58+122°F	8 °C	L1
Id	Interval between defrost cycles	0 + 99 hours	6	L1
Md	Maximum length for defrost	0 + 99 min.	30	L1
dF	Display during defrost	rt - in - dE	it	L2
ALARMS				
AU	Maximum temperature alarm	ALL+99°C / ALL+210°F	99 °C	L1
AL	Minimum temperature alarm	-55°C+ALU/-67°F+ALU	-55 °C	L1
Ad	Temperature alarm delay	0 + 99 min	15	L2
dA	Exclusion of temperature alarm at startup	0 + 99 min	90	L2
OTHER				
d2	Evaporator probe display	Read Only	- - -	L1
Pt	Parameter code table	Read Only	- - -	L1
rL	Firmware release	Read Only	- - -	L1

dixell S.p.a.

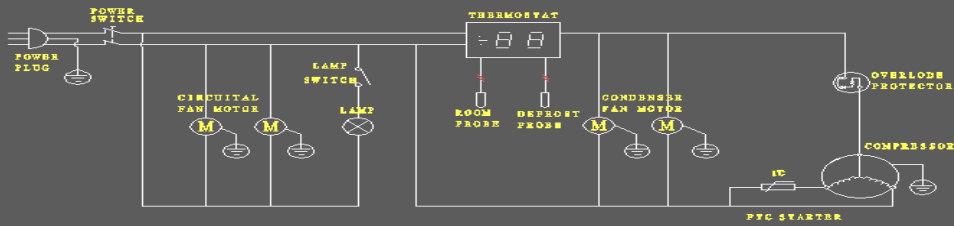
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<http://www.dixell.com> E-mail: dixell@dixell.com

CIRCUIT DIAGRAM



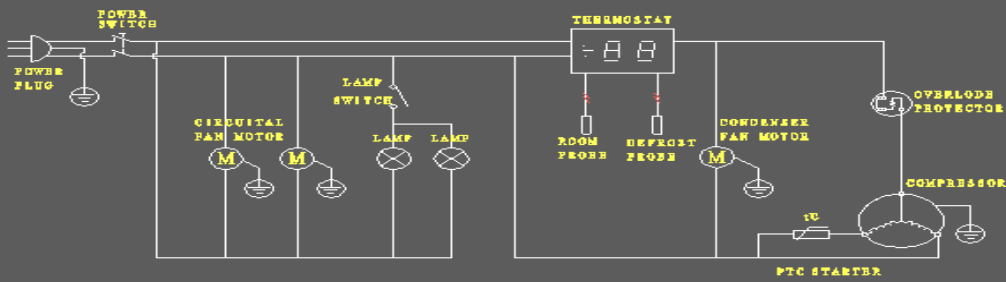
KBC4/SC250G/SC250SD

CIRCUIT DIAGRAM



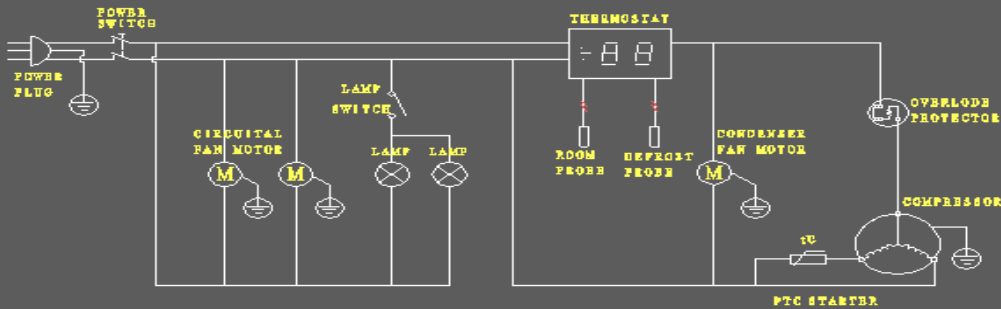
KC4/KC6/KC8

CIRCUIT DIAGRAM



BC2100/BC2100G/BC3100/BC3100G/BC4100/BC4100G

CIRCUIT DIAGRAM



BC2100/BC2100G/BC3100/BC3100G/BC4100/BC4100G