

P.P.U.H. "Geco" spółka z o. o. [Ltd.] 30-134 Krakow, No. 112A Zarzecze Street tel. +48 (12) 6369811,6361290 fax. +48 (12) 6362002 e-mail: <u>geco@geco.pl</u> http://www.geco.pl

SERVICE MANUAL FOR AN INDEPENDENT CONTROL BLOCK [ICB]

<u>G-204-P00K...</u>

OPTION FOR REFRIGERATING EQUIPMENT

For Program Version 01

Please, read this manual thoroughly before connecting and activating any piece of equipment from Geco. In case if you have any doubts, please contact our company between 8 a.m. and 4 p.m. All comments sent by e-mail will provide valuable aid for us.

Attention !!! At the bottom of the following pages you will find the date of last update, and the end of page 16 shows information on successive changes of program version and the way it operates.

<u>Please, always use the most recent issue of the manual, which is available from us free of charge by mail after ordering.</u>

I. GENERAL CHARACTERISTICS

Independent Control Block, later referred to as the **G-204**, is a modern device, which is comfortable and easy to use. It has been manufactured using microprocessor technology, and automatic surface mounting.

G-204 is a single-module version of the G-203-P00K thermostat, fitted on a rail.

G-204 has been equipped with two temperature probes - it is possible to connect the door probe to the control panel or executing module - then they work at <u>safe 5V voltage</u>, and four outputs allowing to connect directly equipment working at 230V, with loading potential as shown in Table 1.

In case if it is used in refrigerating equipment, the G-204 stabilises temperature and controls automatic defrosting, and this function length may be adapted to specific surrounding conditions, and it also has a push-button for manual boiler de-icing. Moreover, the G-204 may be provided extra with lighting switch working independently of main switch.

These thermostats do not require any special maintenance; keyboard has been made of special foil type resistant to high temperature and most chemical agents. It is unacceptable to clean it with sharp-ended objects, it is sufficient to wipe the front panel occasionally with wet cloth, <u>only after having disconnected the unit</u>.

II. SYMBOLS AND TECHNICAL DATA

Model designation:	G	- 2	04	-P	00	K	Х	Х	$-\mathbf{M}$	XXXX	Χ
Item:	1	2	3	4	5	6	7	8	9	10	11

- 1- "Geco" thermostat.
- 2- For use in refrigerating engineering.
- 3- Casing type: 02 mini-panel, 03 large keyboard (also with potentiometer), 04 single-module to be fixed on rail.
- 4- First symbol describing panel (keyboard).
- 5- Program version (00 general-purpose).
- 6- Temperature presetting method: (P- potentiometer, K- keyboard).
- 7- Light push-button: L light push-button installed, 0 no light push-button.
- 8- Buzzer: B buzzer installed, 0 no buzzer.
- 9- First symbol describing the executive module.
- 10-Shows which relays are installed. Detailed specification is provided below.
- 11-Door probe: D mechanical or magnetic door probe, Y optical door probe, 0 no option to connect any door probe.

Additional information regarding relay symbols.

Digits indicate that relay is installed, 0- no relay:

- 1 compressor relay must be provided
- 2 light relay
- 3 fan relay
- 4 heater / valve relay.

The simplest thermostats contain:

- 1000 compressor
- 1200 compressor and light

and most developed ones:

- 1034 compressor, fan, heater
- 1234 compressor, light, fan, heater

Other examples:

- 1030 compressor and fan
- 1004 **compressor** and heater
- 1230 compressor, light, fan
- **12**04 **compressor**, **light**, heater

Working voltage	-	230V +10% -15%
Ambient temperature	-	from +5°C to +40°C
Humidity	-	from 20% to 80% RH
Protection degree	-	IP65 from control panel front side

Output	Car	rying ca	apacity
P1 – Compressor	8A	2HP	1500W
P2 – Light	4A	-	750W
P3 – Fan	4A	1HP	750W
P4 – Heater / Valve	8A	-	1500W

Attention !!!

- <u>Currents shown in the table are taken by individual devices during</u> regular operation and they already include starting currents of these devices !!!
- Total current taken at the same time by all equipment shall not exceed 10A !!!

III. HOW TO ORDER

When ordering, provide the following:

- 1. Controller type: e.g. G204-P00KLB-M1234 D.
- 2. Length of temperature probes.
- 3. It is also possible to make an extra order for door probes working in a fully contactless way:
 - magnetic probe, operating range 1-2 cm;
 - optical probe, operating range 1-2 cm.

IV. DELIVERY, ASSEMBLY AND CONNECTION

- 1. Fix the G-204 unit on rail and lock it with a latch.
- 2. All metal elements, through which the G-204 or its cables are put, shall be filed off or protected in other way. It is unacceptable to mount the G-204 in a way allowing water to contact it directly (e.g. water condensing on lower display case housing), to touch discharge tube from evaporator, etc., and generating considerable changes of its temperature in relation to ambient temperature (e.g. installing the unit in direct vicinity of the compressor and its accessories, and cooled and heated elements).
- 3. As soon as the G-204 unit is fixed, connect power cables according to the specification provided on its side walls. Depending on the G-204 version, certain outputs may remain unused they will not be described on the specification label, and proper items in the type designation will contain zeros *it is prohibited to connect any cables to these outputs !!!*
- 4. All connectors used are certified for <u>continuous</u> load 16A!!! They have fine thread and special plates preventing cables from being cut, and that is why even light tightening ensures very good contact, and use of any greater force may result in thread break. *This may result in socket being melted and shorting !!!*
- 5. Shorten all cable allowances by cutting them or winding up and putting together with special plastic bands. The cables have to be well-fixed along their entire length and they may not touch either the compressor or its accessories.
- 6. When the unit is connected to power supply, voltage may occur in the lighting cable, no matter if the unit is turned on or off with the D push-button, and that's why it is allowed to replace starter or fluorescent lamp only when power supply cable is unplugged !!!

<u>THE SAME PROVISION APPLIES TO EXECUTION</u> <u>OF ANY OTHER REPAIRS !!!</u>

8. If heaters are used, select their power so as to ensure that in case if the G-204 or contactor breaks down and heaters are permanently on, there is no chance for fire or unit damage. *If high-power heaters are used, absolutely use safety thermostat on evaporator - the thermostat should be of a different type, e.g. mechanical.*

V. PROBE FITTING GUIDELINES, PROTECTIVE SHELL TYPES

- 1. For *each* type of manufactured unit it is required to select *experimentally* locations for room probe and evaporator probe, and ICB (Independent Control Block) settings. It is strictly prohibited to alter in any way probe mounting location or method, and the ICB settings, without carrying out new tests on temperature stabilisation and the device defrosting process !!!
- 2. Fit the room probe so as to prevent it from touching food products, and to protect it from damage while cleaning the device. Use special plastic grip to fix this probe. This solution will induce rapid (time delays on/off see section VI par. 6 and 7) reaction of probe and the whole thermostat to the change of air temperature in the device. If this is recommended or necessary to slow down and "smooth" probe reaction time to temperature changes, we propose to fix it to any metal element of the unit.
- 3. Fix evaporator probe so as to ensure best possible contact with the evaporator lamella, in a location, where ice stays longest during defrosting. It should be fixed so as to prevent it from being pushed out by building up ice. If possible, the probes should be fixed vertically to ensure that the cable comes out from probe bottom.
- 4. It is possible to shorten or lengthen **probe cables** freely, however provided that the rules listed below are observed:
 - do not cut off probe cable at a distance shorter than 0.5 m from shell;
 - we do not recommend to lengthen probe cable more than 20 m;
 - METHOD USED TO CONNECT PROBE CABLES TO THE TERMINALS AT EXECUTIVE MODULE PROBES IS FREE TO CHOOSE !!!

(the same as method to plug in the cable – to \sim 230V);

- we recommend using cable type OMY 2x0.5 mm to lengthen cables;
- be particularly careful when connecting cables in case of their lengthening, solder each conductor pair and put on them heat-shrinkable sleeves. Then pour water-resistant silicone on cable joint and put on it one more heat-shrinkable sleeve;
- cable ends connected to the ICB shall be coated with tin.

VI. PRINCIPLE OF OPERATION

A - General Information

- 1. As soon as the device is plugged in, a 3-second long start procedure will be executed. During that procedure, the display will show two dots for one second, the controller program version for the next second, and then two dots again. During that period no controlled device will be turned on.
- 2. As soon as the start procedure is complete, two horizontal dashes will light from point 1 on central display segments. The dashes signal "live" condition if the unit has not been previously on !!!. Press push-button ① to activate the device. The display will show temperature value from the room probe.
- 3. After pressing and holding push-button 1 for 0.5 second, the display will start to blink and show the *evaporator* temperature, and after another 5 seconds the G-204 will automatically return to the room temperature readout. *Attention*??? This function works also during defrosting, when the display shows "*dF*". It is also possible to see temperature from room probe by pressing 1 for 0.5 second, the display will start to show *room* temperature (*no blinking*), and after another 5 seconds the G-204 will automatically return to displaying "*dF*".
- 4. Lighting small red diode (dot) in right bottom corner of the temperature display indicates compressor activated. This allows for easier check of possible system defects.
- 5. If the compressor should be activated, and this does not happen because of activation of any safeguards (see par. 6, 7, 10 and 11), the dot signalling compressor operation will keep blinking. As soon as preset time from safeguards passes, the dot will start to light permanently and the compressor will be activated.
- 6. Delay in compressor activation <u>after reaching</u> its activation temperature (temperature preset by user minus lower hysteresis value) is 30 seconds. If the temperature drops during that period, the condition of exceeded 30 seconds will be rechecked. This is expected to protect the compressor from unnecessary activation due to e.g. putting products in, draughts, etc.
- 7. Each time after preset temperature is reached (temperature preset by user plus upper hysteresis value), and after each power failure or voltage drop below 175V, the G-204 will make it impossible to reactivate the compressor for time period specified by parameter 'c2'. However, if 'c2'=0min, after current decay the safeguard will last for 60 seconds.
- 8. When the device is activated with push-button ①, there will be a 5-second delay in compressor activation. However, user must remember that this cancels the power failure safeguard from par. 7 this also applies to time specified by parameter 'c2' after having switched the compressor off. This allows for faster compressor operation check.
- 9. The controller has been equipped with alarms indicating probe damage. The controller will react in different ways, depending on which probe has been damaged.
 - Room temperature probe damage will result in symbol A1 being displayed. The controller will turn on the compressor in time cycle (so-called clock control), according to time values specified in parameters 'c8' and 'c9'. Defrosting will function normally.
 - Evaporator probe damage will result in alarm A2 being displayed. <u>Manual and automatic</u> <u>defrosting function will be blocked !!!</u> The only method allowing to defrost the device is to turn it off using push-button ① and to wait until ice melts naturally.
 - In case if two probes fail simultaneously, only alarm A1 will be displayed. As soon as room probe is repaired, alarm A2 will light.

- 10. If a buzzer is installed in the controller see section *II*, the controller will signal pressing of any push-button with buzzer beep. When the controller is off (two horizontal dashes on the display), the buzzer will signal only push-buttons ① and ③ being pressed.
- 11. Lighting is switched on and off by pressing push-button 👻. Green diode at the button lights in order to signal this. If light is on due to door opening, the diode will not switch on.

Push-button works independently of thermostat power switch - ①.

B - Defrosting

- 1. If extra defrosting is needed due to severe operating conditions, press push-button B. As a result, *green diode in push-button* B will light continuously, and the display will show "dF" instead of measured temperature value, then the unit will enter the defrosting cycle.
- 2. If defrosting takes place and evaporator temperature is **<u>higher</u>** than the value set in parameter 'd2', then after approximately 10 seconds the unit will enter the defrosting exit phase, and as soon as it is closed, it will continue operation.
- 3. If defrosting takes place and evaporator temperature is <u>lower</u> than the value set in parameter 'd2', then the G-204 will activate defrosting, and as soon as temperature from parameter 'd2' is reached, it will enter <u>the defrosting exit procedure</u> (this status is indicated by *blinking of green diode in push-*

button B), while in option <u>with heaters</u> the defrosting exit procedure will take place that consists of two successive phases:

- **dripping phase** in which the compressor and evaporator fans remain off for time period specified in parameter 'c3';
- **evaporator freezing out phase** in which only the compressor works in order to reduce evaporator temperature to the value specified in parameter 'd5', prior to fans restart. Parameter 'c4' determines maximum and impassable freezing out time independently of reaching temperature 'd5' by evaporator.
- 4. Defrosting exit procedure will be ended with activation of fans, switching off "dF" on the display

and switching off green diode blinking in push-button B.

- 5. In case if there are no fans, or they are not connected to the ICB, the system will behave as if they were installed.
- 6. Defrosting will end as soon as evaporator reaches temperature value preset in parameter 'd2', or after time preset in parameter 'c1' has passed.
- 7. When "dF" is switched off and defrosting is complete, the display will show temperature saved in memory just before defrosting start for time specified in parameter 'c7' this is expected to prevent from complaints due to abrupt temperature changes in the device.
- 8. The system will behave in the same way at **manual and automatic** defrosting.

<u>C – Door probe principle of operation</u>

- 1. If door is opened, the fan will be immediately stopped and light may be switched on in the G-204, depending on parameter 'r7' setting. The display shows temperature.
- 2. If door has not been closed, after 30 seconds the display will show **<u>permanently</u>** symbol "dr". Short sound signal is generated in controllers with installed buzzer, and repeated every 30 seconds.
- 3. If door still has not been closed after time period specified in parameter 'r8', alarm will be activated, which is signalled by **<u>blinking display</u>** showing symbol "dr", and in controller option equipped with buzzer sound signal. At this moment the compressor will be switched off.
- 4. In case if R8 = 0, alarm will be activated immediately after door opening.

page 8 SERVICE MANUAL FOR MANUFACTURERS

- 5. It is possible to mute the alarm by pressing any push-button. When door is closed, alarm will be deactivated and further operation resumed.
- 6. The controller allows to connect both mechanical open door probe, which closes while door is open (R6=01), and mechanical or magnetic probe, which opens while door is open (R6=02).

HYSTERESIS

While programming parameters 'd0' and 'd1' (minimum and maximum temperature, which may be set by customer), remember that hysteresis value 'd3' causes additional temperature shift down and up from temperature value preset by user.

This is particularly important in case of so-called 'plus' devices, which should always work at temperature values above 0°C.

As the refrigerating system Manufacturer, in this case refrigerated counter (temperature values above 0°C) we require the unit <u>to permit</u> operation in temperature range within values provided below: OFF min: 2°C. ON max: 10°C.

Symmetrical hysteresis for even	Symmetrical hysteresis for odd
'd3' values	'd3' values
Example 1.	Example 3.
For example, let's set hysteresis 'd3' to 2°C	For example, let's set hysteresis 'd3' to 3°C
In order to set hysteresis as before, we should	In order to set hysteresis as before, we should
set parameters 'd0' at 3°C and 'd1' to 9°C	set parameters 'd0' at 3°C and 'd1' to 8°C
Example 2.	Example 4.
For example, let's set hysteresis 'd3' to 4°C	For example, let's set hysteresis 'd3' to 5°C
In order to set hysteresis as before, we should	In order to set hysteresis as before, we should
set parameters 'd0' at 4°C and 'd1' to 8°C	set parameters 'd0' at 4°C and 'd1' to 7°C



VII. ACTIVATION DIAGRAMS FOR INDIVIDUAL DEVICE SUBASSEMBLIES

Wide line indicates **activation** (**ON**), and intermittent line - **deactivation** (**OFF**) of individual devices. Defrosting exit consists of two phases - see section **V** par. 3.

Field "Stop" indicates deactivation, and "Operation" - activation of compressor due to exceeded programmed temperature value, certainly taking into account programmed hysteresis value - parameter 'd3'. Heater on Fig. 1 is designed to heat up tray and/or water discharge hose from evaporator. Heater from diagram 4. is designed only to heat up water discharge hose from evaporator.

error in parameter settings will result in erratic unit operation !!!

1. Defrosting by compressor stop 'r1'=01, fans work only together with compressor 'r2'=00



COMPRESSOR HEATER	†			t = c 3	t=c4		
			n e se se				
FAN	1				1		
	Stop	Operation	DEFROSTING	DEFRC	STING EXIT	Operat	tion Stop

VIII. SYSTEM PARAMETERS - PROGRAMMING

As soon as you activate and check correct unit operation (standard settings are entered in factory), start entering the G-204 system parameters.

In order to do that deactivate the unit with push-button O. Then press push-buttons P and B, and, holding them down, press push-button O. Keep all three push-buttons pressed together for 3 seconds. If any push-button is released too early, the unit will exit programming mode. When this operation is completed, the diodes in push-buttons B and P should begin to blink, and the display will show symbol 'c0' for one second. Then the last programmed value of this parameter will appear. Next, using push-buttons B, enter required settings, each time a push-button is pressed and held, displayed values will be scrolled at fast rate. Then, press P to accept entered data, and go to next parameter entering mode.

Partial entering of settings is possible; if you do not want to modify particular setting, press P and the G-204 will switch to next parameter.

Attention !!!

Using computer programmer, refrigerating system Manufacturer may block access to some or even all parameters from keyboard. In that case if there is any attempt to modify settings of blocked parameter, the display will show symbol 'bL' for approximately 1 second.

Comments regarding the ICB programming.

- 1. REFRIGERATING SYSTEM MANUFACTURER AND SERVICE CENTRE ARE OBLIGED TO ENTER NEW SETTINGS NECESSARY FOR NORMAL DEVICE OPERATION !!!
- 2. Carry out programming carefully it is best to start with writing down values of individual parameters on a sheet of paper. Remember that in case of some parameters making of <u>any</u> error will have very serious consequences, including product and refrigerating system damage.
- 3. As soon as unit is programmed and activated, check the way it works and once more verify correct system parameters settings.
- 4. It is strictly prohibited to pass to final user either the service manual or the information how to program the ICB system parameters. Final user shall be provided <u>only</u> with a copy of section *IX* in this manual.

Table 2: Parameter definitions

Para- meter	Description	Min.	Max.	Step	Factory setting
c0	Time interval between defrosting Attention !!! In case if this	0	24	1h	6h
	parameter is set to "0" there will be no automatic defrosting, but only manual one!!! If this parameter is set to "-01" there will be neither automatic nor manual defrosting!!!	-01			
c1	Maximum defrosting time if evaporator does not reach preset	10	99	1min	30min
	temperature (parameter d2) <i>Attention!!!</i> In case if this parameter is set to "-01", <i>there will be no</i> time limit.	-01			
c2	Minimum compressor stoppage time.	0	15	1min	3min
c3	Evaporator dripping time.	0	15	1min	2min
c4	Evaporator freezing out time, after which fans will be activated	0	25	1min	10min
	independently of whether evaporator has reached temperature value preset in parameter 'd5'.				
c5	Maximum compressor operation time	0	99	1min	40min
	0 – indicates no test (deactivation of this parameter).				
c6	Compressor stoppage time after activation of safeguard from parameter 'c5'.	0	99	1min	10min
c7	Time period after defrosting end (parameter 'c4'), for which measured temperature will be shown before defrosting starts.	0	60	1min	5min
c8	Compressor operation time in case of control probe damage.	1	99	1min	25min
c9	Compressor stoppage time in case of control probe damage.	1	60	1min	5min
d0	Minimum temperature to be set by customer.	-40	20	1°C	1°C
d1	Maximum temperature to be set by customer.	d0+1	40	1°C	10°C
d2	Evaporator temperature, at which defrosting ends.	0	40	1°C	5°C
d3	Hysteresis value.	1	10	1°C	2°C
d4	Graduation value for room probe in relation to actually measured temperature.	-10	10	1°C	0°C
d5	Evaporator temperature, at which fans will start operation after defrosting process end.	-30	10	1°C	-5°C

page 12 SERVICE MANUAL FOR MANUFACTURERS

ICB TYPE G-204-P00K

r1	Specifies evaporator defrosting method, parameter set to: 01 – defrosting by compressor stop 02 – defrosting with heater 03 – defrosting with hot vapours - valve (reverse cycle)	01	03	1	02
r2	Specifies evaporator fans operation method, parameter set to: 00 – fans operate only with compressor 01 – fans operate all time after switching on power ATTENTION!!! This parameter has no effect on evaporator defrosting cycle and method.	00	01	1	01
r3	Specifies temperature control method, parameter set to: 00 – regular control 01 – temperature is controlled according to measurements from evaporator probe, programmed temperature and parameters D0, D1, D2 and D3 relate to evaporator probe, measurements from room probe is being displayed.	00	01	1	00
r5	Conditions for defrosting activation during the unit start. 00 – operation start without defrosting 01 – if there was power failure during defrosting, then defrosting would be activated 02 – defrosting each time when the device is plugged in.	00	02	1	00
r6	Door probe option 00 – no door probe 01 – there is door probe closed at open door 02 – there is door probe open at open door	00	02	1	01
r7	Lighting activation method 01 – light control only by door probe 02 – light control only by key 03 – light control by door probe and key	01	03	1	03
r8	Time from door opening moment to alarm activation. Symbol "dr" will be displayed 30 seconds after door opening. Short sound signal is generated in controllers with installed buzzer, which is repeated every 30 seconds. When time R8 passes, an alarm will be activated, which is signalled by symbol "dr" blinking on the display, and in controller version with buzzer - by a sound signal, and the compressor will be switched off. 0 – indicates immediate alarm activation.	0	20	1min	1min
r9	Place to connect the door probe: 01 – probe connected to the module with relays 00 – probe connected to the control module – Attention, order special cable with plug in this case !!!	00	01	1	01

IX. THE G-204 OPERATING FOR USER

- After plugging in the device, the display will show two dots for one second, then its program version, and two dots for another second. Then, two horizontal dashes indicating "live" condition will light in central segments of the display. The unit will be activated after pressing push-button ①. The display will show temperature value from room sensor.
- 2. Setting of temperature stabilised in the display case.
 - Press push-button [P] in order to modify settings. Green diode in the push-button will light then, and the display will show the last programmed temperature value.
 - Push-buttons 🗐 🗊 are used to preset temperature. Each time you press and hold any of these push-buttons, the indications will be scrolled at fast rate.
 - When required temperature is set, press push-button (P) again. When this is done, the green diode in the push-button will go off, and the G-204 will exit the programming mode and it will start to execute a new program.
 - If push-button (P) is not pressed, the G-204 will automatically exit the programming mode after approximately 5 seconds after push-buttons are used last. In this case temperature value will not be saved.
- 3. You will switch lighting on and off by pressing push-button 3, lighting is activated when the green diode is on. Light switch works independently of master switch 3.

ATTENTION - IMPORTANT !!!

If extra defrosting is needed due to severe operating conditions, press push-button B. As a result, green diode in push-button will light, and the display will show "dF" instead of measured temperature value, and the unit will enter the defrosting cycle.

Defrosting will be finished automatically when preset time passes, or when temperature value programmed by refrigerating system Manufacturer is reached.

<u>Repairs carried out on user's own will result in warranty loss, and they may lead to electric shock and hot vapour burns. Therefore, all repairs should be performed by well-trained and licensed servicemen !!!</u>

X. TROUBLESHOOTING

Failure symptoms	Items to check
1. The display is off although the G-204 is plugged in.	Check: - if there is 220V voltage on power terminals L and N
2. The compressor is off although signalling indicates that it is on - red diode	Check: - if there is 220V voltage on power terminals K and N – If voltage is correct, check the compressor
3. Defrosting heater cannot turn on	Check: - if there is 220V voltage on power terminals according to specification on upper wall of the executive module - if voltage is correct, check the heater
<i>4. Fluorescent lamp does not light</i>	 Check: - if there is 230V voltage on power terminals according to specification on upper wall of the executive module - if voltage is correct, check the following: a/ starter b/ fluorescent lamp c/ choke
5. Erratic temperature indication	Check: - probe connection to connectors - value of parameter 'd4' - correct probe fitting - probe cable condition – the cable cannot be damaged <u>in any way</u> - carefully inspect appearance of probe shell external surface, whether it has not been mechanically damaged.
6. It is impossible to preset required temperature value	Check: - values of parameters 'd0' and 'd1' (d0 <d1)< td=""></d1)<>
7. Blinking terminal dots, no possibility to make it work	Check: - supply voltage value - condition of power connectors - whether power connectors are tight
8. Abnormal, odd unit behaviour.	Check: - if there is 230V voltage on power terminals L and N - condition of power connectors - refrigerating system zeroing - wiring system condition and number of devices connected to single phase - if you have suitable thermostat type (label with specification of outputs) for your refrigerating system - if the G-204 has not been exposed to water or any other liquid - if the G-204 is not exposed to humidity or abrupt temperature changes

9. Problems with unit	Check:
defrosting	- values of parameters 'd2' and 'c0', 'c1'
	- value of parameter 'c1'. This is maximum device defrosting time,
	independently of the fact whether evaporator has reached
	programmed defrosting end temperature or not (parameter 'd2'). If this
	time period is too short, the device will not be fully defrosted.
	- correct probe fixing to evaporator lamella
	PROBE MUST BE WELL-FIXED AND CLOSELY ADHERE TO
	LAMELLA !!!
	- whether evaporator probe is mounted in a location, where ice stays
	longest, otherwise check temperature on the probe at the moment,
	when last pieces of ice fall from evaporator. THEN, THIS
	TEMPERATURE SHOULD BE ENTERED AS PARAMETER 'd2'
10. The unit does not	Check:
reach preset	 temperature programmed by user
temperature and does	- values of individual parameters, and in particular 'c2', 'c5', 'd0', 'd1'
not work	- par. 9 - <i>Problems with the unit defrosting</i> . If the unit is not fully
	defrosted, it will not reach programmed temperature !!!
	 room probe fitting method and location
	- whether cabinet side glass panels or display case sliding glass panels
	have not been removed
	- IF THE UNIT IS NOT EXPOSED TO DRAUGHT OR DIRECT
	SUNLIGHT !!!
	- whether there aren't any fans or air conditioners fixed on ceiling or
	nearby
	- condenser cleanness
	- temperature in store (each manufacturer specifies max. unit operating
	temperature)
	- volume of gas, fans, evaporator heater, hose discharging water from
	evaporator
11. incorrect door	
probe operation	- values of parameters 'ro' and 'r/', 'r9'
	- correct probe connection

XI. RETURNS FOR REPAIR

In case if there is an ICB failure and the unit must be returned for repair, it is *strictly* required to fill in *completely* the replacement form provided at the end of this manual. We suggest not to remove the form, but only to make its photo copy.

<u>PPUH 'GECO' reserves the right to refuse acceptance of any unit for</u> <u>free of charge repair in case if there is no form enclosed with it, or</u> <u>the form is incomplete, and in case if any seal break is found !!!</u>

P.P.U.H. 'Geco' Sp. z o. o. [Ltd.] shall bear no responsibility for losses and damage in case if the refrigerating system Manufacturer or his service centre provides final customer with access to information on how to enter modifications in the ICB system data, in case of wrong or unprofessional installation, or for losses incurred due to erratic unit operation.

XII. THE G204 - BLOCK DIAGRAM AND OVERALL DIMENSIONS WITH LIGHT PUSH-BUTTON INSTALLED AND WITHOUT IT



ICB TYPE G-204-P00K

SERVICE CENTRE STAMP	THE ICB REPLACEMENT FORM SERVICEMAN FIRST NAME AND SURNAME					
	DATE:					
	REFRIGERATION DEVICE INFORMATION					
ICB INFORMATION	MANUFACTURER:					
Failure: PANEL ACTUATOR.	TYPE: COMPRESSOR TYPE:					
SERIAL NUMBER:	SERIAL NUMBER:					
TYPE: G-	DATE OF PRODUCTION:					
DETAILED ICB DEF	ECT DESCRIPTION:					
l 						
DATA KEGARDING KEFRIGERATING STSTEM:						
l						
ATMOSPHERIC DISCHARGE MAINS VOLTAGE LOSES VOLTAGE VOLTAGE VOLTAGE	SERVICE SIGNATURE:					
WIRING SYSTEM DAMAGED.						