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FULL GAUGE DIGITAL CONTROLLER OPERATION

This manual is specific to the operation and diagnostic guides of the Full Gauge digital controller used in Glastender self-contained back bar coolers.



Full Gauge

To view the manual specific to the Dixell digital controller used in Glastender self-contained back bar coolers visit:

http://www.glastender.com/PDF/Dixell_digital_controller_operation.pdf

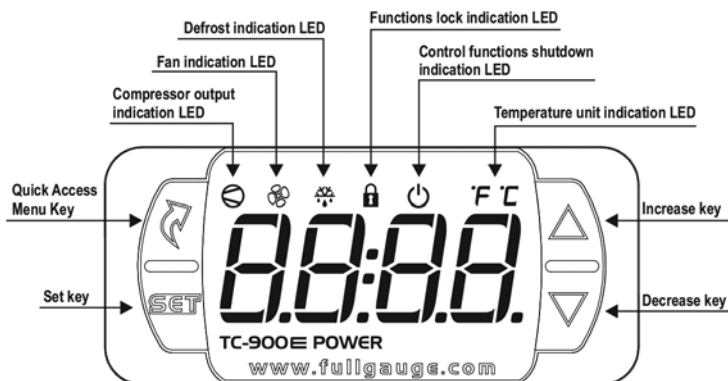


Dixell

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FULL GAUGE TC-900E POWER DIGITAL CONTROLLER OPERATION



The operating temperature range is preset at the factory according to the table below and can be adjusted up or down within the limits shown.

Setting the desired temperature-

To access the setpoints setup menu, press Set for 2 seconds. The message *SP* will appear on the display followed by the normal setpoint set value. Use the Increase key or Decrease key to modify the value and confirm by pressing Set. Immediately, the message *SP-E* appears indicating the setting of the economic setpoint. Again, use the Increase key or Decrease key to modify the value and confirm by pressing Set. Finally, the ---- indication signals the set up completion. The setpoints can also be adjusted individually in the quick access menu.

	Factory Settings		Range of Adjustment	
	Set Point	Operating Range†	Minimum Set Point	Maximum Set Point
Standard Cooler Setting	34° F	34° F to 39° F	33° F	65° F
Two Zone Cooler Settings*				
B = Beer	34° F	34° F to 39° F	33° F	65° F
W = White Wine	50° F	50° F to 55° F	33° F	65° F
R = Red Wine	60° F	60° F to 65° F	33° F	65° F

† Adjusting the factory set point will also adjust the operating range by the same amount

* To determine a Two Zone Cooler refrigeration configuration, refer to the 5th and 6th characters in the model number found on the cooler data tag. These characters will always be one of the following: BW (Beer/White Wine), BR (Beer/Red Wine), or WR (White Wine/Red Wine). Example: MODEL: BB60**BRL**-XS(LR).

The refrigerator is programmed to automatically defrost four times daily for approximately twenty minutes. During defrost, the fan inside the cooler will remain on and the refrigeration system will turn off. The defrost process can be activated/deactivated manually in the quick access menu through the *dEFr* or pressing the Increase key for 4 seconds. Activation or deactivation will be indicated by the messages *dEFr On* or *dEFr OFF* respectively.

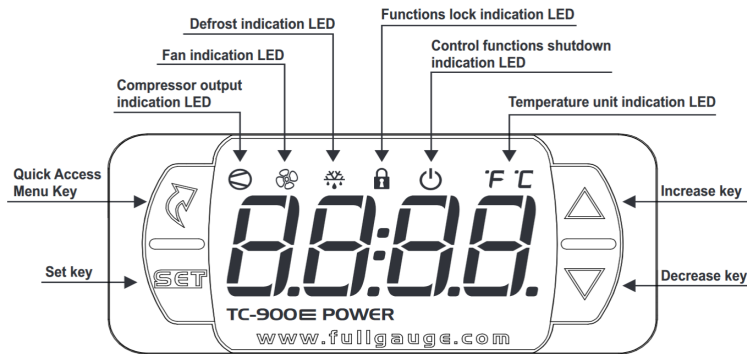
The thermostat controller has an “OFF” function. The shutdown of the control functions allows the controller to operate only as a temperature indicator, keeping the control outputs and alarms off. The use of this feature is enabled or disabled by the shutdown function of the control functions. When enabled, the control functions and alarms are switched off *Ctrl OFF* or on *Ctrl On* in the quick access menu through the *Ctrl* option. When the control functions are off, the message *OFF* is displayed alternating with the temperature and other messages. Also is possible turn on/turn off the control functions by pressing the Increase key for 5 seconds.

Models BB, ND, LP, PT Self Contained Coolers thermostat controller

The thermostat control probe wire may become disconnected when the compressor compartment cover and/or grill are removed. This will result in thermostat *Err 1* or *Err 3* code. Service calls to reconnect the probe wiring are not covered by factory warranty.

SIGNALS	
Err 1	Ambient sensor disconnected or out of range.
Err 3	Sensor 3 disconnected or out of range.
ECO	Operation with economic setpoint.
AELh	High ambient temperature alarm (sensor1).
AELo	Low ambient temperature alarm (sensor1).
AC1	High temperature in condenser alarm (level 1). If this signal occurs, condenser may need cleaning.
AC2	High temperature in condenser alarm (level 2). If this signal occurs, condenser may need cleaning.
ALrC	Compressor reached the maximum time on without reaching the SP.
OFF	Control routines off.
 	It indicates that the temperature for end of defrost has not been reached.
ECLAL	Please contact Full Gauge Controls.
PPPP	Reconfigure the values of the functions.

FULL GAUGE DIGITAL CONTROL DIAGNOSTIC GUIDE



Warning: Performance and reliability issues that result from the controller parameters being changed from the factory default settings are not covered under warranty.

Controller Error Signals

Err1- Product Zone Probe Error

Err2- Evaporator Zone Probe Error

Err3- Condenser Probe Error

- Check to make sure the probe is connected to the controller
- Check to make sure the probe wire is not cut
- Check to make sure the probe is not damaged
- Check the probe resistance and compare to Table 1 in [Checking the Probe Resistance](#) section

ECO- Control is operating in Economic Mode.

This is the 6 hour manual off cycle in an MF or MFV

- In MF or MFV this mode is entered or terminated by pressing the round button next to the controller
- An end-of-the-day schedule should be established for the activation of this defrost cycle
- In a Cooler model, this mode is entered or terminated by pressing the *quick access menu key* twice (ECO will be displayed) and then pressing the *set key* once

Athi- High Product Zone Temperature Alarm

- Use calibrated thermometer to check product zone temp, compare to the controller reading
- If product zone temp is good, check probe resistance and compare to Table 1
- If product zone temp is high, perform warm box diagnostic

AtLo- Low Product Zone Temperature Alarm

- Use calibrated thermometer to check product zone temp, compare to the controller reading
- If product zone temp is good, check probe resistance and compare to Table 1
- If product zone temp is low, perform low box temp diagnostic

AC1- High Condenser Temperature Alarm Level 1

AC2- High Condenser Temperature Alarm Level 2 (shuts off compressor to protect system components)

- Clean condenser
- Check condenser fan
- Check the probe resistance and compare to the resistance chart in [Checking the Probe Resistance](#) section

AlrC- Compressor Reached The Maximum On Time Without Reaching Set Point

- Use calibrated thermometer to check box temp, compare to the controller reading
- Check door gaskets and make sure the doors are being closed
- Perform system diagnostics to check for refrigeration issues
- Refer to [AlrC Error Reprogramming](#) section

OFF- Controller Has Been Switched Off

- Press the *quick access menu key* five times (Ctrl will be displayed) and then press the *set key* once. Control should now be ON

Checking the Probe Resistance

Verify the probe resistance is accurate at the product zone temperature or submersed in ice water

- Use a calibrated thermometer to check the cooler's temperature at the evap or fan inlet where the product zone probe is located
- Disconnect the probe from the controller
- Use a calibrated Ohm meter to measure the resistance of the probe at the box temperature
- The resistance of the probe should match the associated box temperature shown in Table 1
- Submerge the probe in ice water and check the resistance
 - Use plenty of ice and keep the prob in the middle of the ice bath

°C	°F	Ω Resistance
-25	-13	130410
-20	-4	97072
-15	5	72951
-10	14	55326
-5	23	42326
0	32	32650
5	41	25931
10	50	19899
15	59	15711
20	68	12492
25	77	10000
30	86	8057
35	95	6531

- If probe does not have the correct resistance according to the table, the probe is faulty
- If probe has the correct resistance but controller display is not accurate, controller is faulty

AlrC Error Reprogramming

The AlrC Error is a result of the refrigerator not reaching the setpoint in 4 hours of run time. This feature can be shut off by following the following steps:

- Press the **QUICK ACCESS MENU** key 10 times until **Func** is displayed.
- Press the **SET** key 2 times. **0** will be displayed on the control.
- Press the **INCREASE** key until you reach **123** on the display
- Press the **SET** key 1 time and **F01** will be displayed
- Press the **INCREASE** key until you reach **F46**
- Press the **SET** key 1 time.
- Press the **DECREASE** key until **no** is displayed
- Press the **SET** key 1 time
- Wait 15 seconds for the control to default back to operation mode

Changing other parameters within the Functions Menu can affect the refrigerators ability to perform as designed and should not be done. Service performed as a result of an unauthorized change will not be covered under warranty.

Resetting the Parameters Back to Factory Default

The parameters programmed on every control are optimized to meet performance and energy requirements. They should not be deviated from unless instructed to do so by Glastender Inc. Performance and reliability issues that result from the controller parameters being changed from the factory default settings are not covered under warranty.

To access the Parameters:

- Press the **QUICK ACCESS MENU** key 10 times until **Func** is displayed.
- Press the **SET** key 2 times. **0** will be displayed on the control.
- Press the **INCREASE** key until you reach **123** on the display
- Press the **SET** key 1 time and **F01** will be displayed
- Use the **INCREASE** and **DECREASE** keys to scroll through the different functions **F01** to **F58**
- Press the **SET** key to view the setting of each function
- Compare the setting of each function to the appropriate product table below

Beer Temp Parameters

Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	5	F12	0	F22	86	F32	8	F42	-1	F52	12
F03	0	F13	50	F23	0	F33	28	F43	0	F53	0
F04	32	F14	20	F24	2	F34	60	F44	160	F54	-36
F05	65	F15	1	F25	14	F35	60	F45	30	F55	0
F06	0	F16	0	F26	34	F36	1	F46	0	F56	2
F07	75	F17	5	F27	35	F37	3	F47	20	F57	0
F08	360	F18	0	F28	5	F38	3	F48	30	F58	15
F09	0	F19	50	F29	0	F39	0	F49	145		
F10	0	F20	0	F30	3	F40	0	F50	0		
F11	2	F21	4	F31	9	F41	5	F51	0		

White Wine Parameters

Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	5	F12	0	F22	86	F32	8	F42	-1	F52	0
F03	0	F13	50	F23	0	F33	40	F43	0	F53	0
F04	32	F14	20	F24	2	F34	60	F44	165	F54	-36
F05	65	F15	1	F25	14	F35	60	F45	30	F55	0
F06	0	F16	0	F26	50	F36	1	F46	0	F56	2
F07	75	F17	5	F27	55	F37	3	F47	20	F57	0
F08	360	F18	0	F28	5	F38	3	F48	30	F58	15
F09	0	F19	70	F29	0	F39	0	F49	145		
F10	0	F20	0	F30	3	F40	0	F50	0		
F11	2	F21	4	F31	9	F41	5	F51	0		

Red Wine Parameters

Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	5	F12	0	F22	86	F32	8	F42	-1	F52	0
F03	0	F13	50	F23	0	F33	55	F43	0	F53	0
F04	32	F14	20	F24	2	F34	60	F44	165	F54	-36
F05	65	F15	1	F25	14	F35	60	F45	30	F55	0
F06	0	F16	0	F26	60	F36	1	F46	0	F56	2
F07	75	F17	5	F27	65	F37	3	F47	20	F57	0
F08	360	F18	0	F28	5	F38	3	F48	30	F58	15
F09	0	F19	70	F29	0	F39	0	F49	145		
F10	0	F20	0	F30	3	F40	0	F50	0		
F11	2	F21	4	F31	9	F41	5	F51	0		

Mug Froster Parameters

Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	8	F12	0	F22	110	F32	6	F42	-1	F52	12
F03	0	F13	33	F23	0	F33	-15	F43	0	F53	1
F04	12	F14	40	F24	2	F34	360	F44	165	F54	0
F05	100	F15	0	F25	0	F35	1	F45	30	F55	0
F06	1	F16	1	F26	12	F36	2	F46	0	F56	2
F07	105	F17	3	F27	100	F37	3	F47	-15	F57	0
F08	480	F18	0	F28	10	F38	3	F48	60	F58	15
F09	0	F19	40	F29	1	F39	0	F49	145		
F10	0	F20	2	F30	1	F40	0	F50	0		
F11	2	F21	1	F31	1	F41	-20	F51	0		

MFV Parameters

Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	8	F12	0	F22	86	F32	6	F42	-1	F52	12
F03	0	F13	75	F23	0	F33	-10	F43	0	F53	1
F04	-10	F14	20	F24	2	F34	360	F44	165	F54	0
F05	100	F15	0	F25	14	F35	2	F45	30	F55	0
F06	1	F16	1	F26	12	F36	2	F46	0	F56	2
F07	105	F17	5	F27	100	F37	3	F47	-20	F57	0
F08	360	F18	0	F28	5	F38	3	F48	60	F58	15
F09	0	F19	40	F29	1	F39	0	F49	145		
F10	0	F20	3	F30	1	F40	0	F50	0		
F11	2	F21	4	F31	1	F41	-20	F51	0		

Celsius Beer Temp Parameters

Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	3	F12	0	F22	30	F32	8	F42	-1	F52	0
F03	0	F13	10	F23	0	F33	-2.5	F43	0	F53	0
F04	0	F14	20	F24	2	F34	60	F44	73	F54	-20.1
F05	18	F15	1	F25	14	F35	2	F45	20	F55	0
F06	0	F16	0	F26	1.5	F36	2	F46	0	F56	2
F07	24	F17	5	F27	10	F37	3	F47	-6.5	F57	0
F08	360	F18	0	F28	5	F38	3	F48	30	F58	15
F09	0	F19	21	F29	0	F39	0	F49	63		
F10	0	F20	1	F30	2	F40	0	F50	0		
F11	2	F21	4	F31	5	F41	-15	F51	0		

Celsius White Wine Temp Parameters

Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	3	F12	0	F22	30	F32	8	F42	-1	F52	0
F03	0	F13	10	F23	0	F33	-2.5	F43	0	F53	0
F04	0	F14	20	F24	2	F34	60	F44	73	F54	-20.1
F05	18	F15	1	F25	14	F35	2	F45	20	F55	0
F06	0	F16	0	F26	10	F36	2	F46	0	F56	2
F07	24	F17	5	F27	10	F37	3	F47	-6.5	F57	0
F08	360	F18	0	F28	5	F38	3	F48	30	F58	15
F09	0	F19	21	F29	0	F39	0	F49	63		
F10	0	F20	1	F30	2	F40	0	F50	0		
F11	2	F21	4	F31	5	F41	-15	F51	0		

Celsius Red Wine Temp Parameters

Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	3	F12	0	F22	30	F32	8	F42	-1	F52	0
F03	0	F13	10	F23	0	F33	12.7	F43	0	F53	0
F04	0	F14	20	F24	2	F34	60	F44	73	F54	-20.1
F05	18	F15	1	F25	14	F35	2	F45	20	F55	0
F06	0	F16	0	F26	15.5	F36	2	F46	0	F56	2
F07	24	F17	5	F27	10	F37	3	F47	-6.5	F57	0
F08	360	F18	0	F28	3	F38	3	F48	30	F58	15
F09	0	F19	21	F29	0	F39	0	F49	63		
F10	0	F20	1	F30	2	F40	0	F50	0		
F11	2	F21	4	F31	5	F41	-15	F51	0		

Celsius MF Parameters											
Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	4.5	F12	0	F22	43.3	F32	6	F42	-1	F52	12
F03	0	F13	0.6	F23	0	F33	-26	F43	0	F53	1
F04	-21	F14	40	F24	2	F34	360	F44	75	F54	0
F05	38	F15	0	F25	14	F35	1	F45	20	F55	0
F06	0	F16	1	F26	-12	F36	2	F46	0	F56	2
F07	40	F17	5	F27	38	F37	3	F47	-29	F57	0
F08	480	F18	0	F28	5	F38	3	F48	360	F58	15
F09	0	F19	4.5	F29	0	F39	0	F49	65		
F10	0	F20	2	F30	1	F40	0	F50	0		
F11	2	F21	1	F31	1	F41	-29	F51	0		

Celsius MFV Parameters											
Function	Value	Function	Value	Function	Value	Function	Value	Function	Value	Function	Value
F02	4.5	F12	0	F22	35	F32	6	F42	-1	F52	12
F03	0	F13	22	F23	0	F33	-26	F43	0	F53	1
F04	-21	F14	20	F24	2	F34	360	F44	75	F54	0
F05	38	F15	0	F25	14	F35	2	F45	20	F55	0
F06	0	F16	1	F26	-12	F36	2	F46	0	F56	2
F07	40	F17	5	F27	38	F37	3	F47	-29	F57	0
F08	360	F18	0	F28	5	F38	3	F48	360	F58	0
F09	0	F19	4.5	F29	0	F39	0	F49	65		
F10	0	F20	2	F30	1	F40	0	F50	0		
F11	2	F21	4	F31	1	F41	-29	F51	0		