

CASE STUDY

DAC-55™ Door Monitor

Albertsons 160 Boise, ID



Background Information

In August 2008, Larry Meeker and Troy Bingham asked Aztec to oversee the pilot installation of Modularm DAC-55 Freezer Door Monitors at this store location as part of an on-going remodel. Both Larry Meeker and Don Olsen, President of Modularm Inc., thought it would be helpful if we installed hour meters (timers) on the walk-in freezer doors to monitor how long the doors were being left open, both before and after the Modularm DAC-55 devices were installed. Modularm provided the hour meters for the testing.

The hour meters were installed on the following freezer doors:

- Grocery Freezer Left Door – West side warehouse area, left-hand door
- Grocery Freezer Right Door – West side warehouse area, right-hand door
- Grocery Freezer Meat Prep Door – East side door located inside the meat prep
- Bakery Freezer

The results of this test period are shown below:

Test Results

DOOR	BEFORE DOOR ALARM INSTALLED			AFTER DOOR ALARM INSTALLED			PERCENT REDUCTION
	TEST PERIOD	TOTAL HOURS DOOR LEFT OPEN	TOTAL HOURS/ DAY DOOR OPEN	TEST PERIOD	TOTAL HOURS DOOR LEFT OPEN	TOTAL HOURS/ DAY DOOR OPEN	
GROC FZR LEFT DOOR	7-29-08 to 8-19-08	137.1	5.96	10-23-08 to 11-4-08	11.2	0.9	84.8%
GROC FZR RIGHT DOOR	7-29-08 to 8-19-08	24.3	1.1	9-29-08 to 10-23-08	9.7	0.4	63.6%
GROC FZR MEAT PREP	7-29-08 to 8-19-08	55.9	2.4	9-29-08 to 10-23-08	12.2	0.5	79.1%
BAKERY FZR	7-29-08 to 8-19-08	89.2	3.9	10-23-08 to 11-4-08	16.7	1.4	64.1%

Testing Notes

1. In the West side warehouse area, there are two doors into the Grocery Freezer which are side-by-side.
2. Duration for “before” testing was approximately 23 days.
3. Duration of “after” testing on the Grocery Freezer Right Door and the Grocery Freezer Meat Prep Door was approximately 24 days.
4. Duration of “after” testing on the Grocery Freezer Left Door and Bakery Freezer Door was approximately 12 days. There were issues with two of the monitors not reading properly and needing to be reset.
5. DAC-55 was set up to alarm in the following manner: Beacon light begins flashing as soon as door is opened, audible alarm begins sounding when door is left open for 5 minute time period. See “Sequence of Operation” section below for further details.
6. Illuminated Pushbutton (on page 2) was not used as part of this pilot project.

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DAC-55 Sequence of Operations for Typical Supervalu Application

SYSTEM FUNCTIONS	DOOR CLOSED (NORMAL FREEZER OPERATION)	DOOR OPENED	DOOR OPENED FOR TOO LONG (GOES INTO ALARM)	DOOR CLOSED
ALARM STROBE LIGHT	No alarm	Light starts flashing immediately when door is opened	Light continues to flash.	Light stops flashing. Alarm functions reset.
ALARM AUDIBLE (BUZZER)	No alarm	Audible alarm buzzer remains off, begins timing out for 5 minute delay (delay is field adjustable)	Audible alarm buzzer activates	Audible alarm shuts off. Alarm functions reset.
LIQUID LINE SOLENOID	Functions normally for refrigeration/defrost	Liquid line solenoid is de-energized	Liquid line solenoid will automatically re-energize after a short time delay	Liquid line solenoid will automatically re-energize after a short time delay.
EVAPORATOR FANS	Functions normally for refrigeration/defrost	Evaporator fans turn off	Fans will automatically re-start after a short time delay	Fans will automatically re-start after a short time delay.

OPERATION OF THE ILLUMINATED PUSHBUTTON: MOUNTS INSIDE OF WALK-IN FREEZER

WITH THE DOOR OPEN:

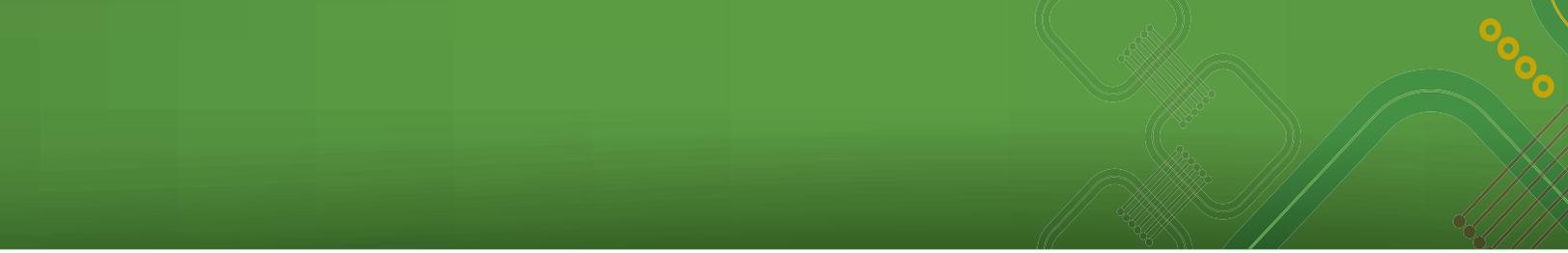
Pressing the Illuminated Pushbutton with the door open **will not** affect DAC-55 or compartment operation. Therefore, when a Door Alarm occurs, the door must be closed to terminate the alarm and restore normal operation.

WITH THE DOOR CLOSED:

When the door is first closed, the Horn in the IP-1 beeps on and off to draw attention to the Pushbutton. The Pushbutton Label instructs personnel inside of the compartment to press the button in order to **turn off refrigeration with the door closed.**

1. If the Pushbutton is **not** pressed within 40 seconds of door closing, refrigeration will automatically start back up.
2. Pressing the Pushbutton with the door closed shuts refrigeration off (Fans & L.L. Solenoid) and starts the **Automatic Panic Alarm** timer. (Timer delay is 20 minutes, non-adjustable.)

3. If personnel remain in the compartment for 20 minutes with the door closed, the Pushbutton Horn begins to beep again. **Re-pressing** the button silences the horn and resets and restarts the Automatic Panic Alarm Timer. This may be done repeatedly.
4. **Automatic Panic Alarm** – If the button is not re-pressed within 40 seconds from when the Pushbutton Horn begins to beep, the horn and the strobe light on the DAC-55 activate immediately to draw attention to the walk-in. Alarm relay activates as well. **AUTOMATIC PANIC ALARM IS A SAFETY FEATURE** to protect an individual who may have been injured or is otherwise disabled inside of the compartment and cannot re-press the Pushbutton.
5. **Manual Panic (Entrapment) Alarm** – Activated by pressing the Pushbutton for 2 seconds (as described on the Pushbutton Label). This causes immediate activation of strobe light and audible alarm and is **PROVIDED AS A SAFETY FEATURE** for situations where personnel may be trapped inside of the walk-in.



MODULARM DAC-55™ Door Monitor Test – Albertsons 160 Boise, ID

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NOTES

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KITCHEN BRAINS®

Food Automation - Service Techniques, Inc.

905 Honeyspot Road, Stratford, CT 06615-7147 USA

Phone: **+1-203-377-4414**

Sales: **1-800-327-8766**

Fax: +1-203-377-8187

International Callers: **+1-203-378-6860**

www.KitchenBrains.com

Toll-free technical support 24/7 from the U.S.,
Canada, and Caribbean: **1-800-243-9271**

International offices are located in the United Kingdom, China and Singapore:

Europe, Middle East, Africa
31 Saffron Court Southfields Business Park
Basildon, Essex SS15 6SS ENGLAND
Phone: **+44 0 1268544000**

China
1803, 18F, No 922 Hengshan Rd
Shanghai 200030, CHINA
Phone: **+8613916 854 613**

Asia Pacific
13A MacKenzie Road
228676
Singapore
Phone: **+65 983159273**

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i. New Products: New Products consisting of microprocessor based controllers, timers, data-loggers or remote monitoring devices for 1 year from date of purchase.

ii. Sensors and Accessories: Sensors and accessories (consisting of probes, wireless sensors, hoses, relays, switches, mounting hardware or accessories) for 90 days from date of purchase.

For complete details consult www.kitchenbrains.com/warranty

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