

XWA11V

Walk-In Temp / Door /Alarm / Light Module



1. GENERAL DESCRIPTION

Model **XWA11V**, 100x64 mm format, is a microprocessor-based controller, suitable for temperature monitoring and alarming in a walk-in cooler or freezer. It is provided with two (2) Relay Contacts to control lights and external alarms. It is provided with one (1) NTC probe input for temperature measurement. The unit has 2 Digital Inputs, one for a Door Switch and the 2nd as an optional Panic Switch. See the catalog for optional accessories. One 5 Pin Input allows the user to program the parameter list with a “Hot Key” (see section 9)

Note: The default settings are listed in the back of this manual. They are set for Coolers (Medium Temp). For Freezers (Low Temp) you MUST Change the ALL and ALU settings. See Section 4.0

We have responded to many requests to make a change in the way the light key operates. It now overrides the Digital input to allow a manual off prior to the LHT being exhausted.

2. GENERAL WARNINGS

2.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept close to 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.

2.2 SAFETY PRECAUTIONS READ ME FIRST!

- Check if the supply voltage is correct before connecting the instrument.
- **Do not expose the back of the instrument to water or moisture:** use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent the formation of condensation.
- **Be sure to seal any J-Box with RTV sealant to prevent cold and moisture intrusion.**
- Warning: disconnect all electrical connections before performing any maintenance operation.
- Fit the probe where it is not damaged by the end-user. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor (see address) with a detailed description of the fault.
- Consider the maximum current that 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 or you may get bad temp readings.**

3. INTERFACE



KEY

FRONT PANEL OPERATION



In Programming Mode press to **select** a parameter or to **confirm** an operation.
 Press and hold this key for more than 5 seconds **to turn the controller OFF.**
 Press and hold this key for more than 1 second **to turn the controller back ON.**



Press to see the HIGH Temp ALARM (**ALU** parameter)



Press to see the LOW Temp ALARM (**ALL** parameter)



In Programming Mode press to browse parameter codes.
 Press to increase the displayed value.
 Press to mute the buzzer (+ relay) when an ALARM is happening.
Hot key programming: with the instrument on, insert the hot key and then press the UP button.



In Programming Mode press to browse parameter codes.
 Press to decreases the displayed value.



Switch ON and OFF the light of the cold room

KEY COMBINATIONS: PRESS SIMULTANEOUSLY

- + To lock and unlock the Keyboard.
- + To enter the Programming Mode.
- + To exit the Programming Mode.
- + To enter a new value for the HIGH Temp ALARM (**ALU**).
- + To enter a new value for the LOW Temp ALARM (**ALL**).

3.1 USE OF LEDS

Each LED function is described in the following table:

LED	MODE	Function
	ON	ALARM signaling
	ON	The light is on
°C	ON	Celsius operation
°F	ON	Fahrenheit operation

4. TEMP ALARMS SETTING

4.1 HOW TO SET THE MIN TEMPERATURE ALARM

- **To modify the minimum (LOW) Temp ALARM:** hold the + keys pressed for 3 seconds until the minimum Temp alarm is displayed.
- Change the value using the **UP** and **DOWN** keys.
- Press the **SET** key to confirm the new value and exit.

4.2 HOW TO SET THE MAX TEMPERATURE ALARM

- **To modify the max (HIGH) Temp ALARM:** hold the + keys pressed for 3 seconds until the max Temp alarm is displayed.
- Change the value using the **UP** and **DOWN** keys.
- Press the **SET** key to confirm the new value and exit.

5. PROGRAMMING

5.1 HOW TO CHANGE A PARAMETER VALUE MAIN MENU

1. Enter the Programming Mode by pressing the **SET** and **DOWN** key for 3 seconds (and will start blinking).
2. Select the required parameter. By using the **UP** or **DOWN** KEY
3. Press the “**SET**” key to display its value (now only the LED is blinking).
4. Use “**UP**” or “**DOWN**” to change its value.

Press “**SET**” to store the new value and move to the following parameter.

To exit: Press **SET + UP** or wait 15 seconds without pressing a key.


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

5.2 THE HIDDEN MENU (PR2)

The hidden menu includes all the parameters of the instrument.

5.2.1 HOW TO ENTER THE HIDDEN MENU (PR2)

1. Enter the Programming Mode by pressing the Set + **down** key for 3seconds (and starts blinking).

2. When a parameter is displayed, **release and re-press** the **SET + down** for more than 7 seconds.
3. The **Pr2** label will be displayed immediately followed from the HY parameter. **NOW YOU ARE IN THE HIDDEN MENU.**
4. **Select** the required parameter as above
5. Press the “**SET**” key to display its value (Now only the  LED is blinking).
6. Use “**UP**” or “**down**” to change its value.
7. Press “**SET**” to store the new value and move to the following parameter.
To exit: Press **SET + up** or wait 15 seconds without pressing a key.
NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

5.2.2 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 + down**”.

In HIDDEN MENU when a parameter is present in First Level the **decimal point LED is on**.

5.3 HOW TO LOCK THE KEYBOARD



1. Keep the **UP** and **DOWN** keys pressed for more than 3 seconds.
2. The “**POF**” message will be displayed and the keyboard will be **locked**. At this point it will be possible only to see the Set Point or the MAX o MIN Temp stored
3. If a key is pressed more than 3 seconds the “**POF**” message will be displayed.

5.4 TO UNLOCK THE KEYBOARD

Keep the **UP** and **DOWN** keys pressed together for more than 3 seconds. The “**PON**” message is displayed

6. LIGHT MANAGEMENT

6.1 TIMED REGULATION: i1L = Y

With **i1L = y** the light remains on at least for the **LHt** parameter.

The **LHt** timer is re-initialized every time the light button is pushed or the door is opened.

With **LHt=0** the light remains on until the light button is pushed again or when the door is closed.

The light is switched on every time one of the following conditions happens:

- the door is open (**i1F = dor**)*DOOR SWITCH PRESENT
- the presence sensor is activated (**i2F = LHt**)*OCCUPANCY SENSOR PRESENT
- the light button is pushed

The light is switched off when all the following conditions happen:

- the **LHt** timer is exhausted
- the door is closed (**i1F = dor**)*DOOR SWITCH PRESENT
- the presence sensor is de-activated (**i2F = LHt**)*OCCUPANCY SENSOR PRESENT
- Light button regulation: **i1L = n**
- The light button is pressed

FLH (opera mode) The lights will flash (for 2 minutes) every 20 seconds for the **FLH** time (0-5 min) before the end of the **LHt** time as a warning that the lights are about to turn off. **(This should only be used for incandescent or LED lighting only!)**

6.2 MANUAL OVERRIDE VIA THE LIGHT BUTTON

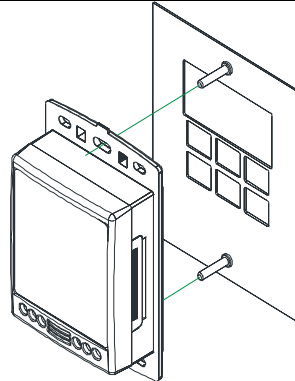
On the XWA11V version 8.8 it is now possible to turn the light off regardless of the Door Switch conditions. The light button on the face of the control takes precedence over the digital input, and the **LHt** parameter. This allows for the **LHt** to remain as a back-up in case the light button has not been pressed to turn the light off.

7. INSTALLATION AND MOUNTING

7.1 MOUNTING OF XWA11V

The **XWA11V** must be mounted on vertical panel, in a J-Box (Steel City P/N 68371/2) or equal or wall mounted using an appropriate enclosure.

The Ambient Temp range for correct operation is 32 – 131°F. (0-55°C) Avoid installation in places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes.



8. ELECTRICAL CONNECTIONS

The instrument is provided with ¼" (.250") fast-on terminal blocks to connect the digital and analog inputs. Relays and power supply have a Fast-on connection ¼" (.250"). For supply connections use 14 AWG or larger copper or CU wire only, rated to at least 90°C (194°F). Before connecting cables make sure the power supply complies with the instrument requirements. Separate the probe cables from the power supply and output power connections. Do not exceed the maximum current allowed on each relay and in case of heavier loads use a suitable external relay.
Note: Maximum current allowed for all the loads is 15A.

8.1 PROBE CONNECTIONS

The probe shall be mounted with the bulb upwards to prevent damage due to casual liquid infiltration. It is recommended to place the thermostat probe away from air streams to correctly measure the average room temperature. The probe can be extended up to 300 ft. Check calibration when running long lengths over 100ft.

9. USE OF THE PROGRAMMING "HOT KEY"

9.1 HOW TO PROGRAM A HOT KEY FROM THE INSTRUMENT (UPLOAD)

1. Program one controller with the front keypad.
2. When the controller is ON, insert the "Hot key" and push **UP** key; the "uPL" message appears followed a by flashing "End"
3. Push "SET" key and the **End** will stop flashing.
4. Turn OFF the instrument and remove the "Hot Key", then turn it ON again.

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

9.2 HOW TO PROGRAM AN INSTRUMENT USING A HOT KEY (DOWNLOAD)

1. Turn OFF the instrument.
2. Insert a **programmed "Hot Key"** into the **5 PIN receptacle** and then turn the Controller ON.
3. Automatically the parameter list of the "Hot Key" is downloaded into the Controller memory, the "doL" message is blinking followed a by flashing "End".
4. After 10 seconds the instrument will restart operation with the new parameters.
5. Remove the "Hot Key".

NOTE the message "Err" is displayed for failed programming. In this case turn the unit off and then on if you want to restart the download again or remove the "Hot key" to abort the operation.

10. ALARM SIGNALS

Message	Mode	Cause	Outputs
"P1"	Flashing	Probe failure	Alarm output ON
"PoF"	Flashing (3s)	Keyboard locked	Not changed
"Pon"	Flashing (3s)	Keyboard un-locked	Not changed
"HA"	Alternated with temp	Maximum temperature alarm	Alarm output ON
"LA"	Alternated with temp	Minimum temperature alarm	Alarm output ON

"dA"	Alternated with temp	Door switch alarm	Alarm output ON
"EA"	Alternated with temp	External alarm	Alarm output ON
"PAn"	Alternated with temp	Serious external alarm	Alarm output ON
dEF	Alternated with temp	Defrost is running	Not changed

The alarm message is displayed until the alarm condition is reset.

Silencing buzzer

Once the alarm signal is detected the buzzer can be silenced by pressing the (UP) key.

10.1 ALARM RECOVERY

Probe alarms: "P1" (probe1 faulty), automatically stop 10 seconds after the probe restarts normal operation. Check connections before replacing the probe.

Temperature alarms "HA" and "LA" automatically stop as soon as the thermometer temperature returns to normal operating values or when the defrost starts.

Door switch alarm "dA" stops as soon as the door is closed.

External alarms "EAL", "BAL", "dEF" stop as soon as the external digital input is disabled.

11. TECHNICAL DATA

Housing: self extinguishing ABS

Case: face; 100x64 mm (3.94"x2.52"). Depth; 45.5mm (1.79")

Mounting: J-box or wall-mount in suitable enclosure

Frontal protection: IP65

Connections: 1/4" (.250") fast-on for power, 1/4" (.250") fast-on for probes and Digital Inputs

Power supply: 120Vac ± 10%, optional 230Vac ± 10% MAX 15A

Power absorption: 4VA max.

Ambient Temperature: 32-131°F (0-55°C)

Display: 3 digits, red LED, 14.2 mm (.56") high.

Inputs: 1 NTC probe

Digital inputs: 2 free voltage

Relay outputs: Voltage Supplied Relay Contacts

Light: relay SPST 15A, 120Vac;

Alarm: relay SPST 8A, 120Vac

Other output: alarm buzzer

Data storing: on the non-volatile memory (EEPROM).

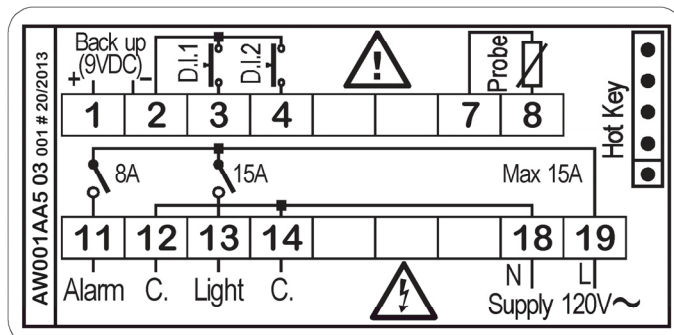
Measuring and regulation range:

NTC probe: -40 to 110°C (-58 to 230°F)

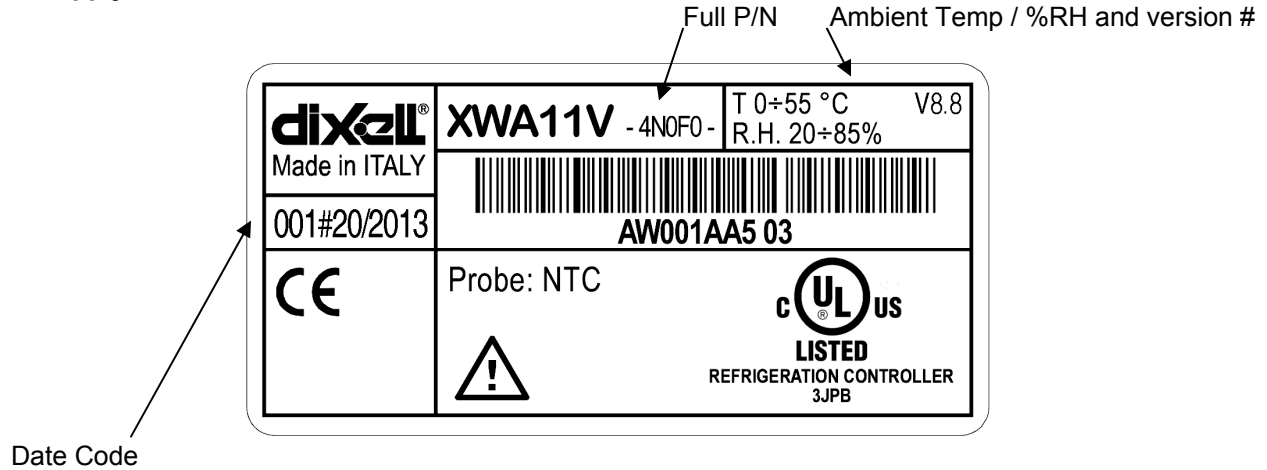
Resolution: 1 °F

Accuracy: ±1 °F

12. CONNECTIONS



Power supply: 120Vac +/- 10% 15A MAX current



13. DEFAULT PARAMETER MAP

LABEL	DESCRIPTION	VALUE	LEVEL	RANGE
ot	Thermostat probe calibration	0	Pr2	[-21°F to 21°F]
CF	Temperature measurement unit	F	Pr2	°C - °F
rES	Resolution (only for °C)	in	Pr2	dE - in
UT	Display update	60	Pr2	0 to 255 (sec.)
OnF	Off function enabling	y	Pr2	n - Y
ALU	High temperature alarm setting (med temp / low temp)	50 / 30	Pr1	ALL to 302° F
ALL	Low temperature alarm setting (med temp / low temp)	30 / -20	Pr1	°-58 to ALU
AFH	Temperature alarm differential	2	Pr2	1°F to 45°F
ALd	Temperature alarm delay	30	Pr1	0 - 255 (min.)
dAo	Delay of temperature alarm at start-up	1.3	Pr2	0.0 - 24.0 Hrs.
EdA	Alarm delay at the end of defrost	30	Pr2	0 - 255 (min.)
dot	Delay of temperature alarm after closing the door	15	Pr2	0 - 255 (min.)
LHt	Light timer	15	Pr1	0 - 255 (min.)
FLH	Light Flashing Timer (time before light goes out that it will flash)	0	Pr1	0 - 5 (Min)
doA	Open door alarm delay	15	Pr1	0 - 255 (min.)
oA1	First relay configuration	ALr	Pr2	ALr - LHt - OnF
oA2	Second relay configuration	LHt	Pr2	ALr - LHt - OnF
AOP	Alarm relay polarity	CL	Pr2	OP - CL
i1P	Digital input 1 polarity	CL	Pr2	OP - CL
i1L	Door switch to turn light ON	y	Pr2	n - Y
i1F	Digital input 1 operating mode	dor	Pr2	EAL - dor - dEr - LHt
i2P	Digital input 2 polarity	cL	Pr2	OP - CL
i2F	Digital input 2 operating mode	PAn	Pr2	EAL - Pan - dFr - LHt
did	Time interval/delay for digital input alarm	0	Pr2	0 - 255 (min.)
tbA	Alarm relay disabling	n	Pr2	n - Y
PbC	Kind of probe	ntc	Pr2	PtC - ntC
dP1	Real temperature Probe 1		Pr2	(probe value)
rEL	FW release		Pr2	read only
Ptb	Parameter map		Pr2	read only

14. PARAMETER LIST

- Ot** **Thermostat probe calibration:** (-12.0 to 12.0°C/ -21 to 21°F) allows to adjust possible offset of the thermostat probe.
- CF** **T measurement unit:** °C = Celsius; °F = Fahrenheit. When the measurement unit is changed the Set Point and the values of some parameters have to be modified.
- rES** **Resolution (for °C):** (in = 1°C; dE = 0.1 °C) allows decimal point display.
- Ut** **Display update:** The time delay of the Temperature readout (0 to 255 seconds)
- onF** **Off function enabling:** n = off function disabled; y = off function enabled;
- ALU** **High Temp alarm setting:** (ALL to 150°C or 302°F); when this temperature is reached and after the ALd delay time the HA alarm is enabled.
- ALL** **Low Temp alarm setting:** (- 50°C or -58°F to ALU) when this temperature is reached and after the ALd delay time, the LA alarm is enabled.
- AFH** **Temp alarm differential:** (0.1 to 25.5°C; 1 to 45°F) differential for temperature alarm Set Point and fan regulation Set Point, always a positive value
- ALd** **Temp alarm delay:** (0 to 255 min) time interval between the detection of an alarm condition and the corresponding alarm signaling.
- dAO** **Delay of Temp alarm at start-up:** (0min to 23hrs, 50min) time interval between the detection of the temperature alarm condition after the instrument power on and the alarm signaling.
- EdA** **Alarm delay at the end of defrosts:** (0 to 255 min) Time interval between the detection of the temperature alarm condition at the end of defrost and the alarm signaling.
- dot** **Delay of Temp alarm after closing the door:** (0-255 min) Time delay to signal the temperature alarm condition after closing the door.
- LHt** **Light timer:** (0-255 min) Amount of time the light will stay on after pressing the light switch on the keyboard or after the door is closed.
- FLH** **Light Flashing:** (0-5 min) The light will "double flash" every 20 seconds during the FLH time period before turning off after the LHt time. *This should only be enabled for use with incandescent or LED lighting!*
- doA** **Open door alarm delay:**(0-255 min) delay between the detection of the open door condition and its alarm signaling: the flashing message "dA" is displayed.
- oA1** **First relay configuration: (14-15):** ALr = alarm; LHt = light; onF = on/off relay
- oA2** **Second relay configuration: (14-16):** ALr = alarm; LHt = light; onF = on/off relay
- AOP** **Alarm relay polarity:** cL = closing contacts (Relay will close on alarm giving voltage output);
oP = opening contacts (Relay will open on alarm no voltage output).
- i1P** **Digital input 1 polarity (1-2):** CL : the digital input is activated by closing the contact;
OP: the digital input is activated by opening the contact
- i1L** **Door switch to turn light ON(1-2):** (y / n) To turn the light ON automatically when the door is open. The light will turn off based on LHt . Keyboard switch must be turned ON first.
- i1F** **Digital input 1 operating mode(1-2):** EAL = external alarm; dor = door switch; dFr = A defrost is running; LHt = keep light ON (signal from occupancy sensor) override LHt.;
- i2P** **Digital input 2 polarity (1-3):** CL : the digital input is activated by closing the contact;
OP: the digital input is activated by opening the contact
- i2F** **Digital input 2 operating mode:** configure the digital input function:
EAL = External alarm;
PAn =Panic alarm;
dFr = A defrost is running; (need external CT's)
LHt = Keep light ON (signal from occupancy sensor) overrides LHt.
- did** **Time interval/delay for digital input alarm:**(0-255 min.) If I2F=EAL or PAn (external alarms), "did" parameter defines the time delay between the detection and the successive signaling of the alarm.
- tbA** **Alarm relay & Buzzer disabling:** (y ; no)
- Pbc** **Type of probe (PTC, NTC)**
- dP1** **Probe 1 Temperature**
- rEL** **Software release** for internal use.
- Ptb** **Parameter table code:** read only.

15. CONTACT INFORMATION AND AGENCY LISTING INFORMATION

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