Dream Smart Thermostat

Residential & Hospitality
Application Guide

ECO-UTILITY SERVICES

COPENHAGEN 07:18 SUNDAY 24 NOV

12°

| MON | TUE | WED | THU | FRI |
| 13° | 10° | 24° | 13° | 17° |

Smart.
Connected.
Bold.

Energex

ENERGY STAR

Energex Dream Thermostat, smarts, simplicity and looks.

Welcome to to the dream of smart, connected devices,
Intelligent control and intuitive design. The Dream Suite of Commercial and Residential
Thermostats is cloud-connected and powered by unlimited wired and wireless sensors
designed to provide the ultimate comfort and ease of use.

*Local, simple WIFI
Connectivity*

*Wired & Wireless
PIR Sensors*

*AI and Machine
learning*

*Wired & Wireless
Temp. & Hum. Sensors*

*Wired & Wireless
Door/Window Sensors*

*App and Dashboard
experience*

Important Safety Information and Installation Precautions

Please read all instructions

Failure to follow all instructions may result in equipment damage or a hazardous condition. Read all instructions carefully before installing equipment. Local codes and practices Always install equipment in accordance with the National Electric Code and in a manner acceptable to the local authority having jurisdiction. Please ensure that the thermostat is precisely matched to the type of system it is connected to both in physical connection and thermostat programming. Refer to Energex Dream Thermostat Programming manual for system programming, connectivity and addressing.

Electrostatic sensitivity

This product and its components may be susceptible to electrostatic discharge (ESD). Use appropriate ESD grounding techniques while handling the product. When possible, always handle the product by its non-electrical components.

High voltage safety test

Experienced electricians, at first contact, always assume that hazardous voltages may exist in any wiring system. A safety check using a known, reliable voltage measurement or detection device should be made immediately before starting work and when work resumes.

Lightning and high-voltage danger

Most electrical injuries involving low-voltage wiring result from sudden, unexpected high voltages on normally low voltage wiring. Low-voltage wiring can carry hazardous high voltages under unsafe conditions. Never install or connect wiring or equipment during electrical storms. Improperly protected wiring can carry a fatal lightning surge for many miles. All outdoor wiring must be equipped with properly grounded and listed signal circuit protectors, which must be installed in compliance with local, applicable codes. Never install wiring or equipment while standing in water.
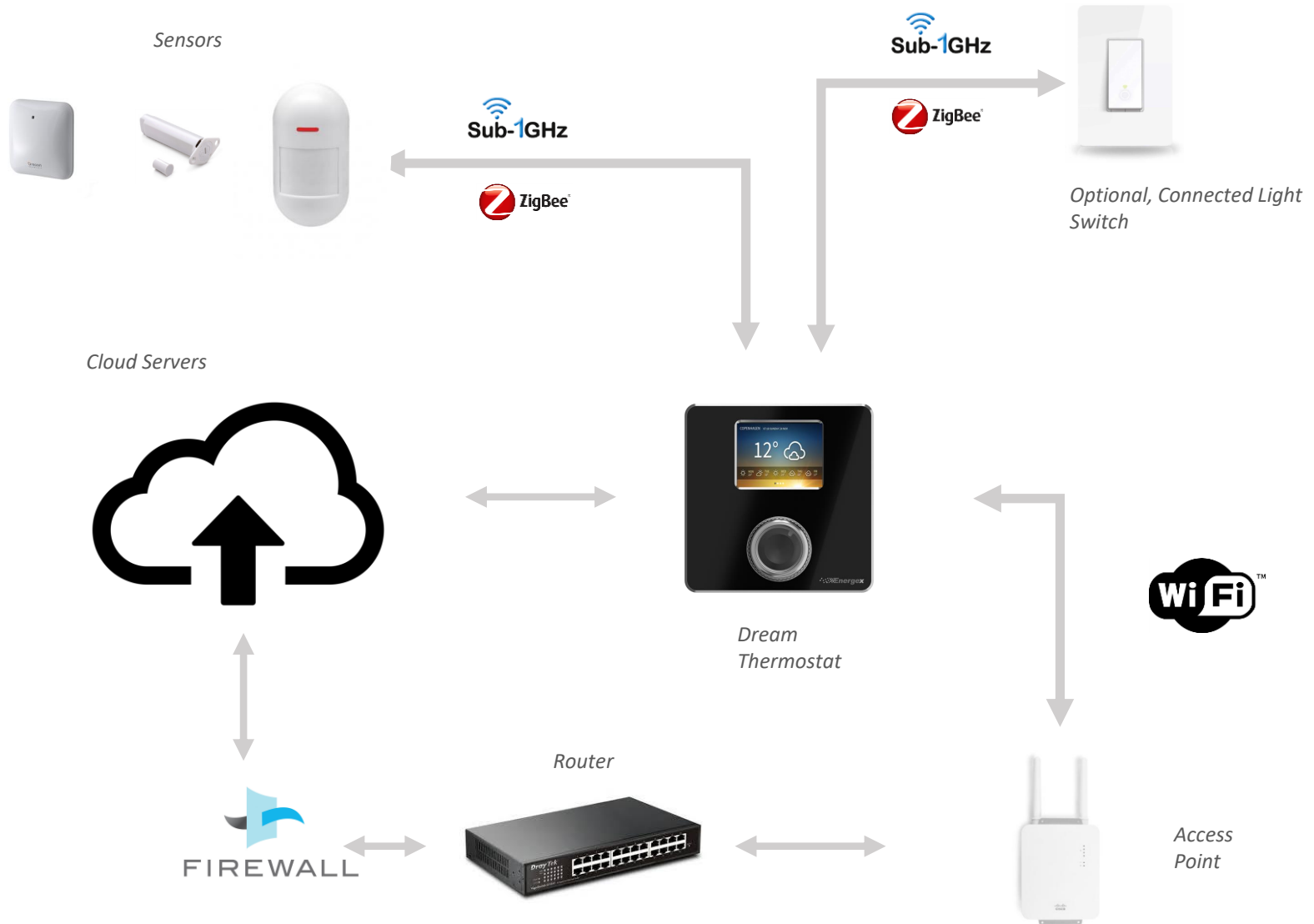
Wiring and equipment separations

All wiring and controllers must be installed to minimize the possibility of accidental contact with other potentially hazardous and disruptive power and lighting wiring. Never place 24VAC or communications wiring near other bare power wires, lightning rods, antennas, transformers, or steam or hot water pipes. Never place wire in any conduit, box, channel, duct or other enclosure containing power or lighting circuits of any type. Always provide adequate separation of communications wiring and other electrical wiring according to code. Keep wiring and controllers at least six feet from large inductive loads (power distribution panels, lighting ballasts, motors, etc.). Failure to follow these guidelines can introduce electrical interference and cause the system to operate erratically.
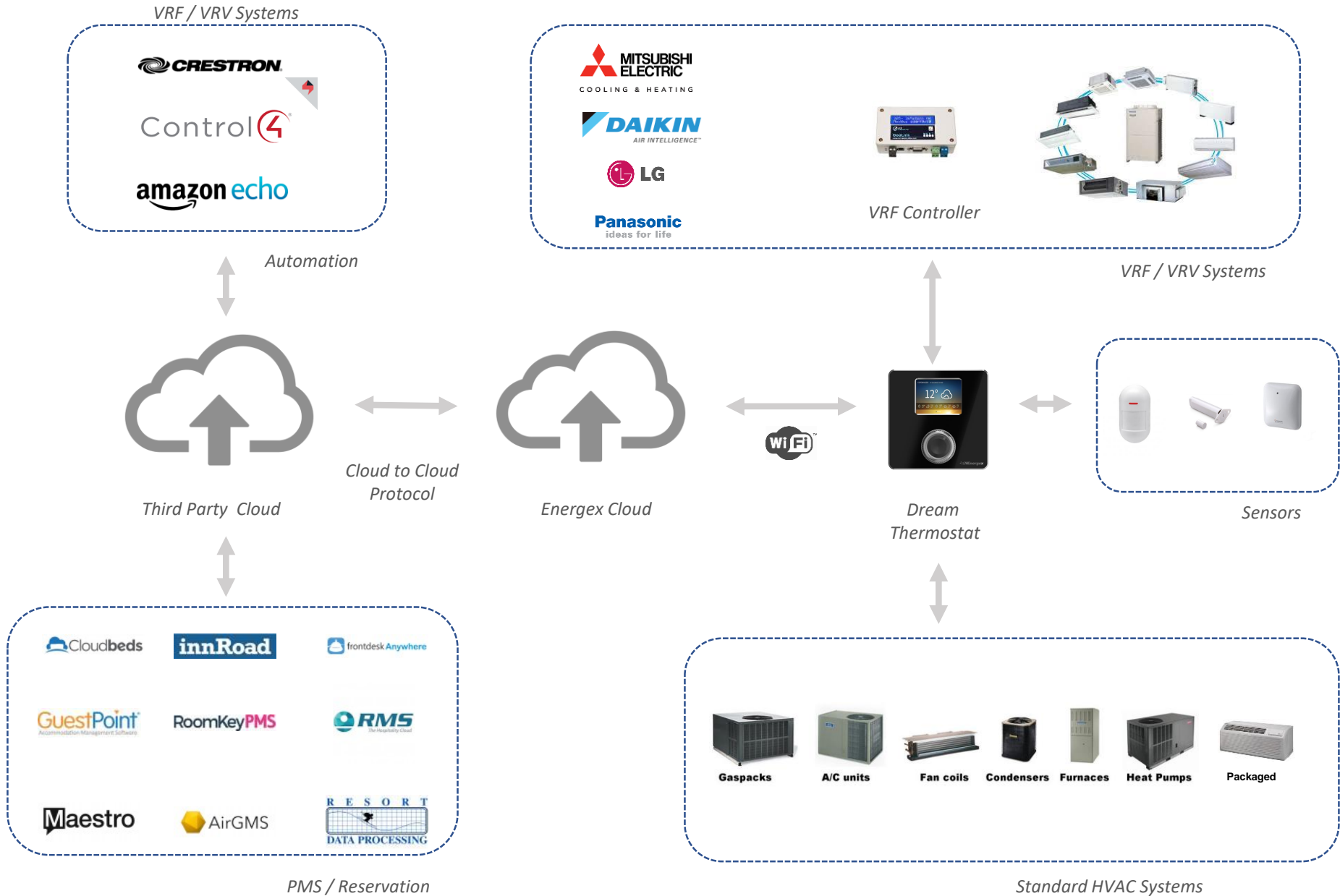
Warning

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Wireless System Architecture

Sensors

Sub-1GHz

ZigBee

Sub-1GHz

ZigBee

Optional, Connected Light Switch

Cloud Servers

Dream Thermostat

Wi-Fi

Router

FIREWALL

Access Point

12°

Second and Third Party Platform Integration

VRF / VRV Systems

CRESTRON

Control4

amazon echo

Automation

MITSUBISHI ELECTRIC
COOLING & HEATING

DAIKIN
AIR INTELLIGENCE

LG

Panasonic
ideas for life

VRF Controller

VRF / VRV Systems

Third Party Cloud

Cloud to Cloud Protocol

Energex Cloud

WiFi

Dream Thermostat

Sensors

Cloudbeds

innRoad

frontdesk Anywhere

GuestPoint
Accommodation Management Software

RoomKey PMS

RMS
The Hospitality Cloud

Maestro

AirGMS

RESORT
DATA PROCESSING

PMS / Reservation

Gaspacks   A/C units   Fan coils   Condensers   Furnaces   Heat Pumps   Packaged

Standard HVAC Systems

Technical Specifications

Dimensions	4.78" (122mm) wide x 4.78" (122mm) tall x 1.25" (28mm) deep
Heat/Cool Terminals	R, B, W, W1, O, Y1, GL, GH, C, Y2
Electrical Ratings	1.5 Amps per terminal @ 24 Volts
Temperature Control Range	▪Temp control 45°F to 90°F (7°C to 32°C) ▪Display range: 32°F to 99°F (0°C to 37°C) ▪Temperature Differential: adjustable from ± 0.25°F to ± 2.25°F *Accuracy ± 1°F over a range of 45°F to 90°F*
Environmental Limits	▪Moisture and Dust: meets IP20 ▪Operating Humidity: 20% to 90% (non-condensing) ▪Operating temperature: +14°F to 122°F (+10°C to 50°C) ▪Storage temperature: +40°F to 140°F (-20°C to +60°C)
Wifi Specifications	③ 2.4GHz: 802.11b/g/n ▪SHA256RSA data encryption ▪Network commissioning through iOS/Android app or WPS ▪Program and system settings stored on the device for set up and function - with or without WiFi

Compatible With	▪Universal compatibility for conventional heat & A/Cup to
	   2-stage heat/2-stage cool, Fan Coil Units, PTHP, PTAC
	 ▪Universal compatibility for heat pumps
	   2-stage heat/2-stage cool (including AUX/EMERG heat)
	 ▪2& 3-wire heat only hydronic systems (hot water base board & radiator)
	 Up to 6-way Valve Compatibility

Available Voltages	▪24/120V/208V/230V/265V line voltage systems - 0-10V Systems.
Packaging	▪ Master Carton: 36 Units
Remote sensor options:	PIR, Door, Window, Humidity, Temperature

Available Sensors

Wired PIR Sensor - EN-IS215

Simple to install and economical, the EN-IS215 is ideal for new builds and retrofit. Providing 170ºDegree views and 40'X40' Coverage. Up to 4 PIR Sensors can be linked in any topography.

Remote Humidity Sensor- EN-IS116

Remote, wireless humidity Humidity Sensor for Improved reading from a secondary location. Operates in the ISM Band 433.3 MHz Range. The Sensor is powered by a 9V Lithium Battery (2 years)

Wireless PIR Sensor - EN-IS215W

Ideal where wiring is a challenge, the EN-IS215W operates in the ISM Band 433.3 MHz Range. The Sensors is powered by a 9V Lithium Battery (2 years). Up to 3 PIR's per Thermostat.

Wireless Door Sensor - EN-AMS101W

Control or signal of Doors and Windows with multiple logic, the EN-AMS101W operates in the ISM Band 433.3 MHz Range. The Sensors is powered by a 9V Lithium Battery (2 years)

Remote Temperature Sensor EN-115RP

Ideal where wiring is a challenge, the EN-IS215W operates in the ISM Band 433.3 MHz Range. The Sensor is powered by a 9V Lithium Battery (2 years)
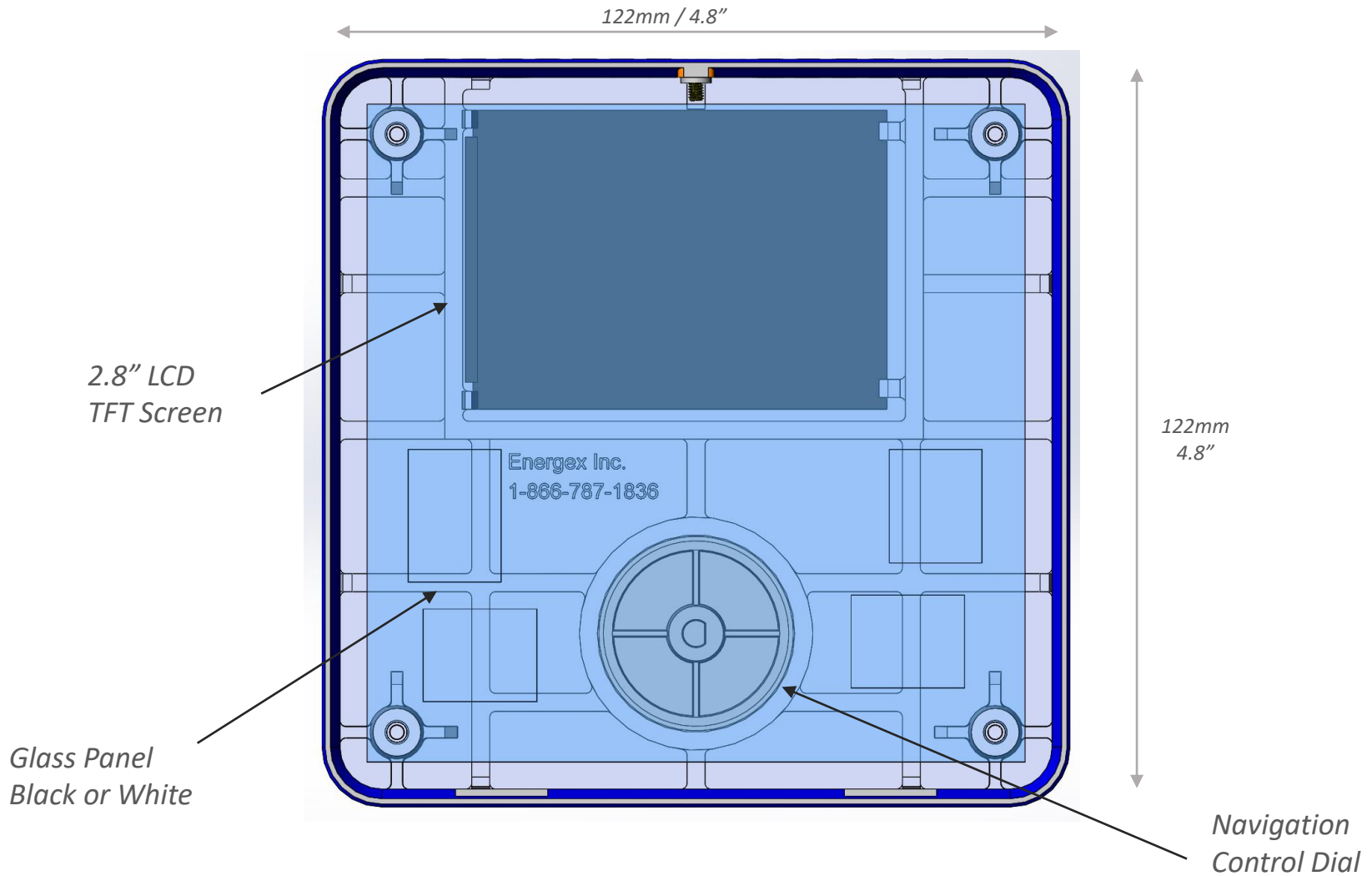
Wired Door Sensor - EN-AMS101

Ideal where wiring is a challenge, the EN-AMS101 wires directly between Doors, Windows and the thermostat for a variety of setback logic and options.
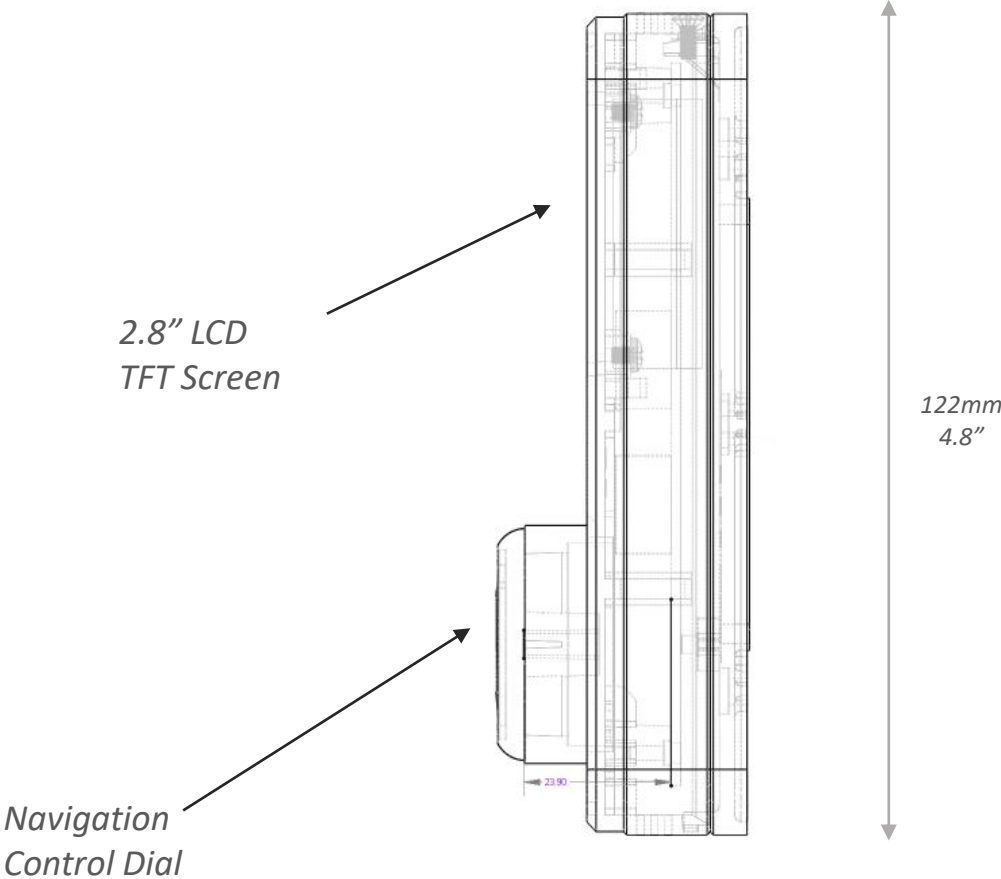
Front of your Dream Thermostat

122mm / 4.8"

122mm 4.8"

2.8" LCD TFT Screen

Energex Inc.
1-866-787-1836

Glass Panel Black or White

Navigation Control Dial

Energex Dream Thermostat EN118A-24

2.8" LCD
TFT Screen

122mm
4.8"

23.90

Navigation
Control Dial
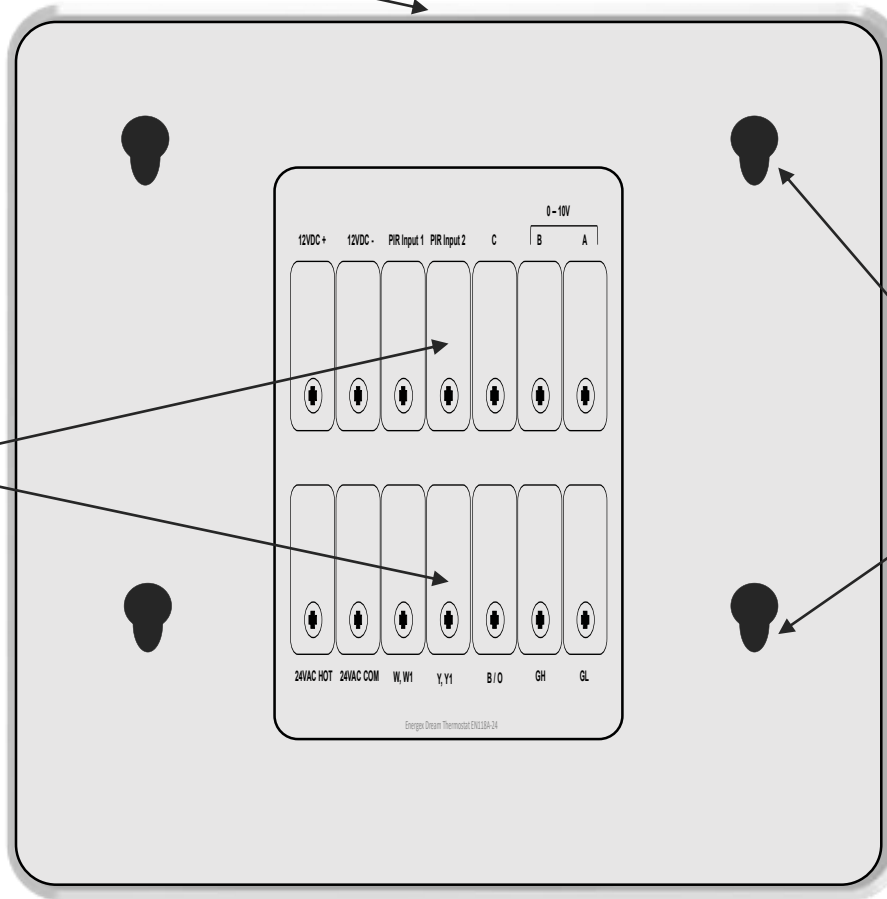
Energex Dream Thermostat EN118A-24

Back of your Dream Thermostat

Top locking Phillips Screw

Quick Connect Terminals

Leveling, Mounting holes

12VDC +	12VDC -	PIR Input 1	PIR Input 2	C	0 – 10V	
					B	A

| 24VAC HOT | 24VAC COM | W, W1 | Y, Y1 | B / O | GH | GL |

Energex Dream Thermostat EN118A-24

Energex Dream Thermostat EN118A-24

Thermostats and Devices Placement and mounting.

Please place and mount Thermostats and devices in dry location, free of direct sunlight, heat sources and furniture.

Mount Thermostats directly into drywall or electrical junction box at 48" AFF. In accessible, disability and healthcare, Install thermostat at 42" AFF.
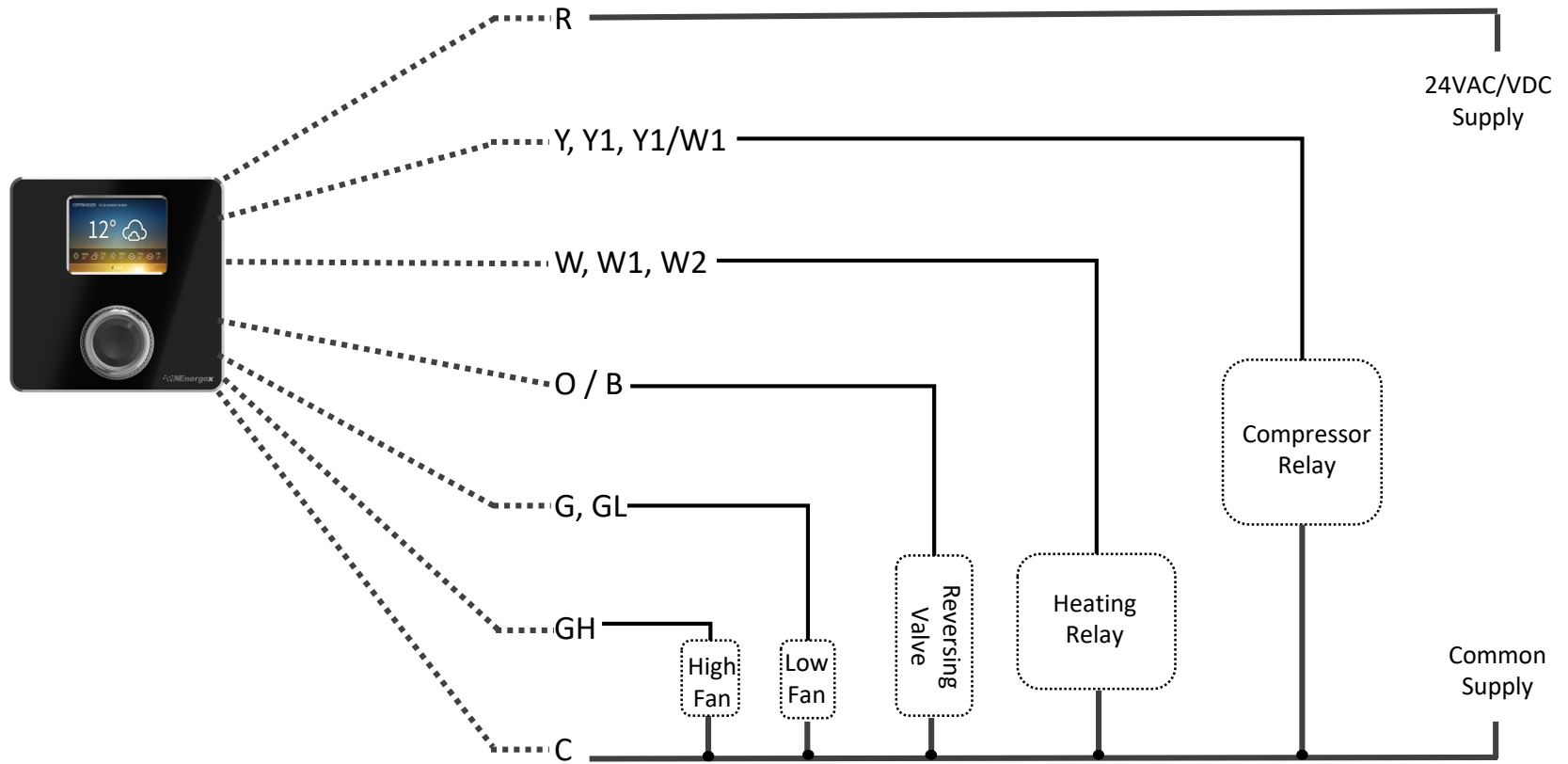
Mount PIR Sensors at 72" – 76" AFF using The provided screws and wall anchors.

Use 4X22AWG Non-Shielded, Non-Stranded Station cable for all wired sensors.

Refer to Programming manual about adding, removing Addressing and commissioning sensor and device.
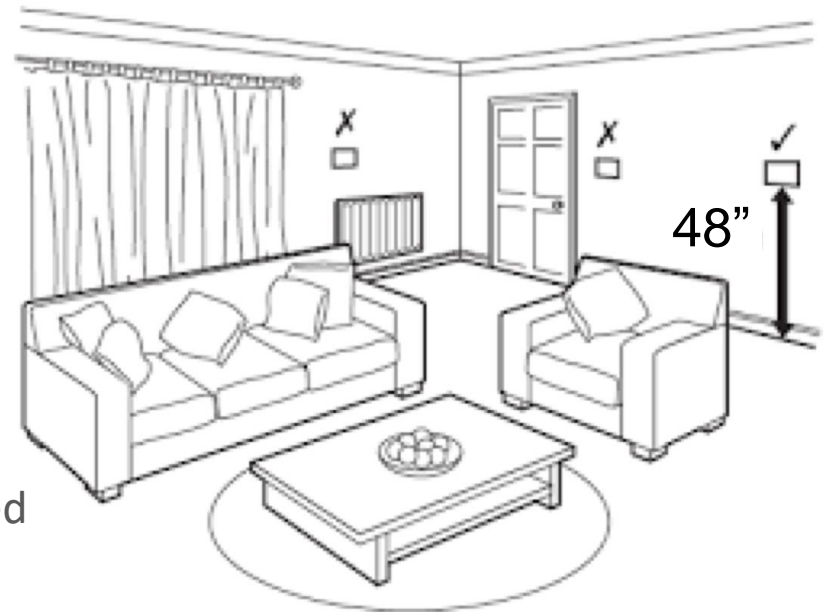
EN-118A Dream Thermostat Wiring Diagram 24V Systems

R — 24VAC/VDC Supply

Y, Y1, Y1/W1

W, W1, W2

O / B

G, GL

GH

C

Compressor Relay

Reversing Valve

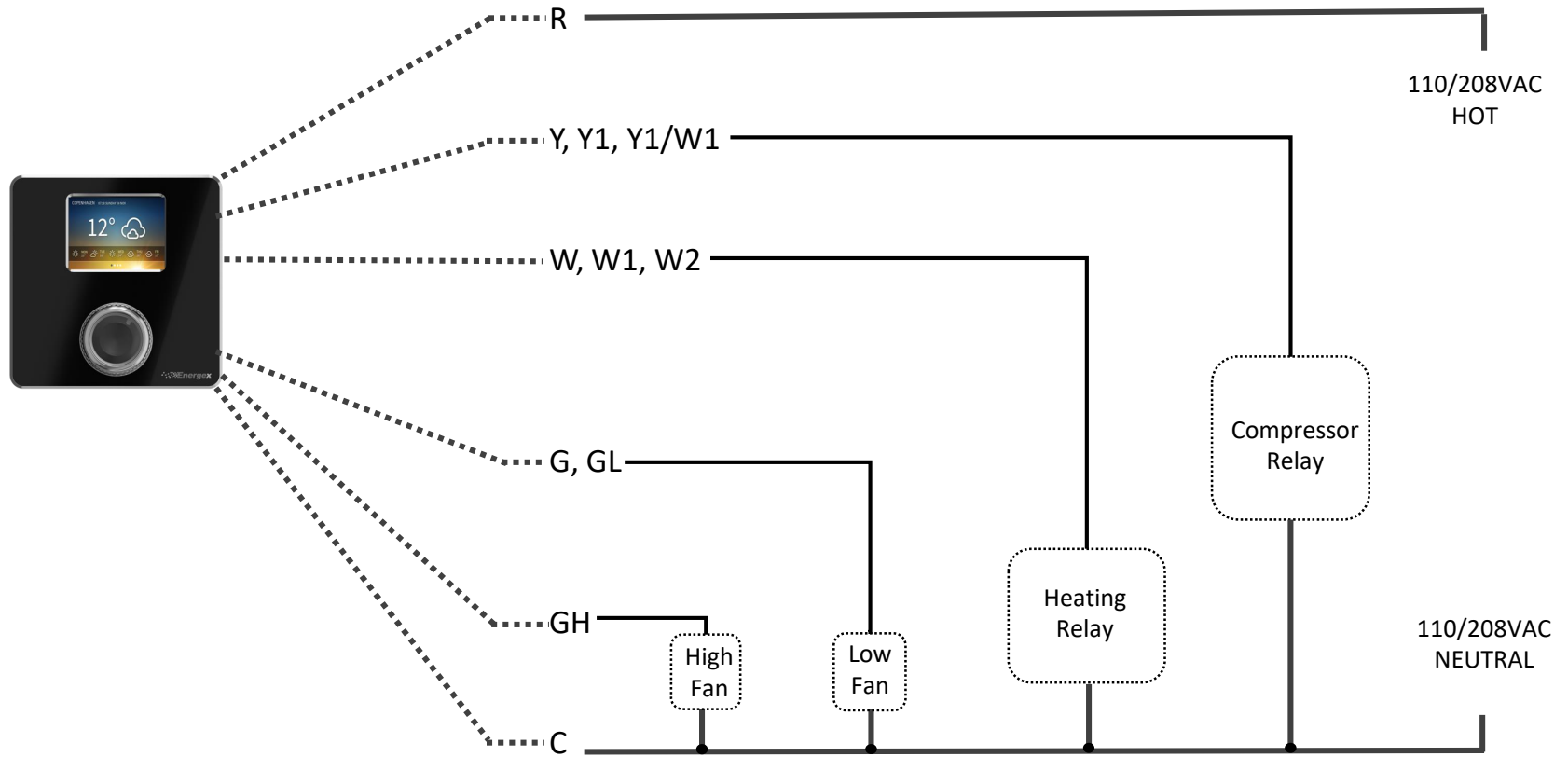Heating Relay
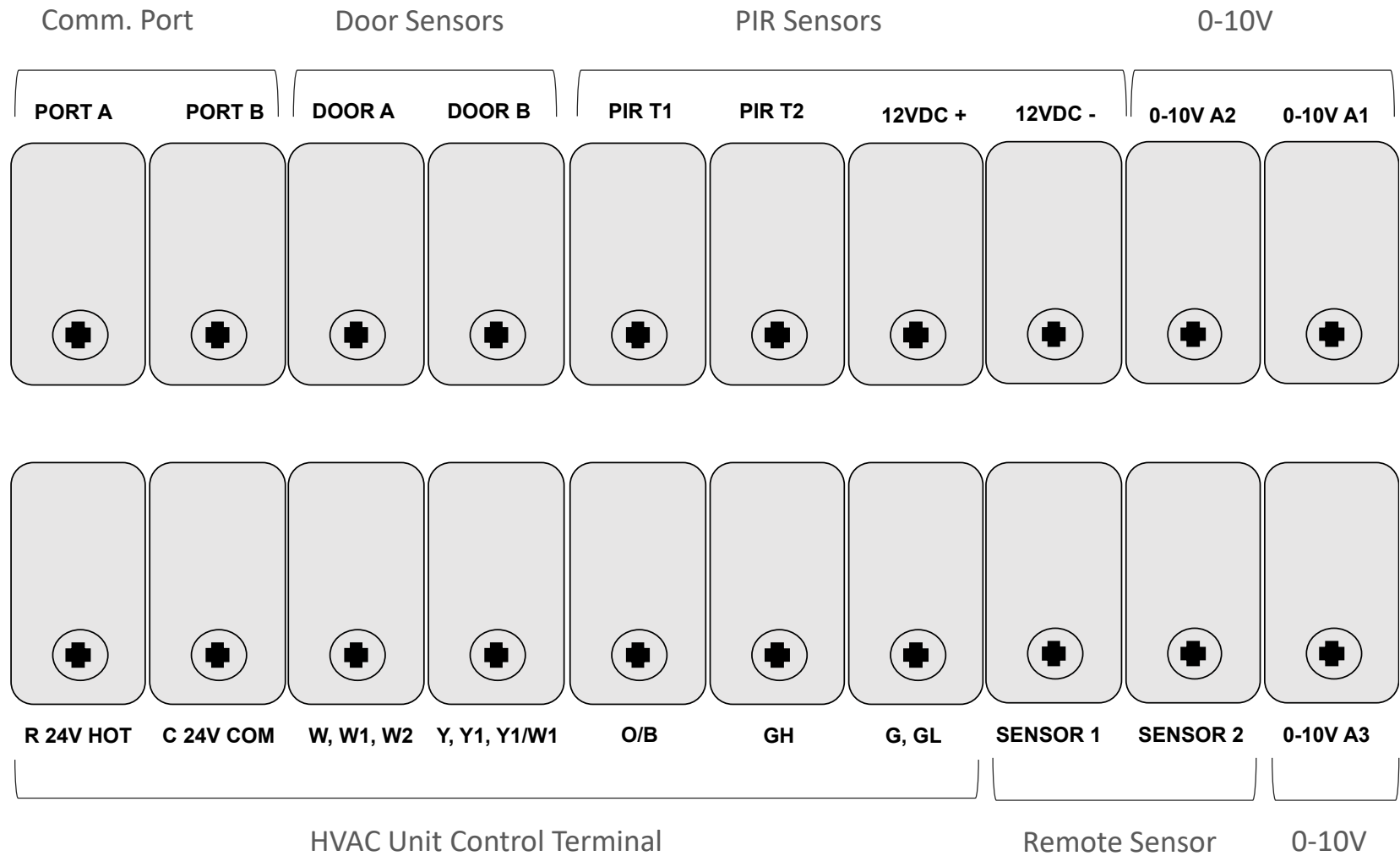
High Fan

Low Fan

Common Supply

- **Please note:** In Heat Pump mode – allow 3-4 minutes delay for compressor protection.
- Terminate Power before Connections.
- In Single Speed systems – Use G,GL Terminal only

Select Fan Speed Function
1 Speed G
Or 2 speed (GH,GL)
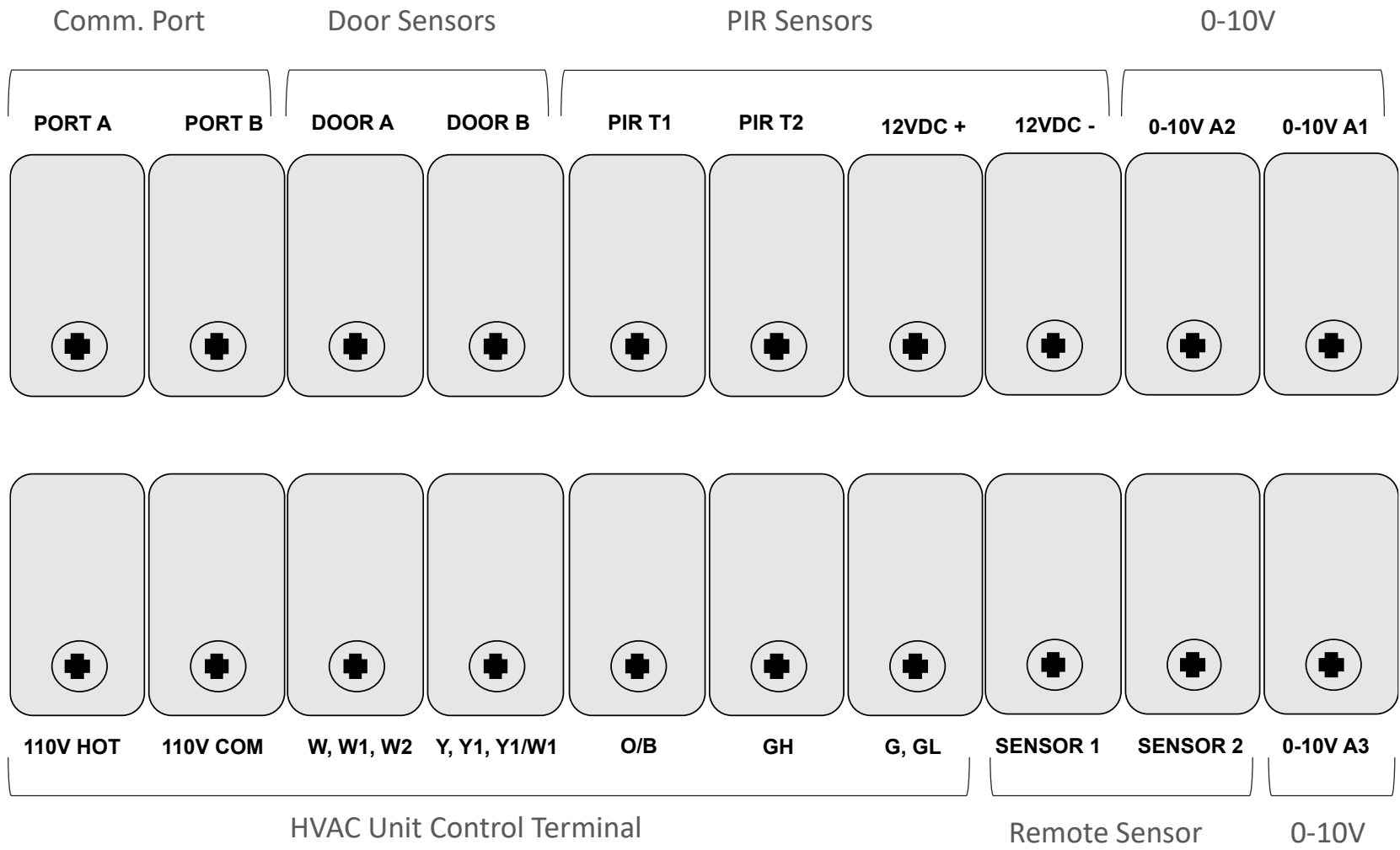Via 'Settings' > 'System'

Select Function
O=Energize Cool
Or
B=Energize / Heat
via 'Settings' > 'System'

Select System Function Heat Pump or Std. Heat-Cool via 'Settings' > 'System'

Energex Dream Thermostat EN118A-24

EN-118A-3 Dream Thermostat Wiring Diagram 110/208V Systems

R

110/208VAC
HOT

Y, Y1, Y1/W1

W, W1, W2

Compressor
Relay

G, GL

Heating
Relay

GH

110/208VAC
NEUTRAL

High
Fan

Low
Fan

C

- **Please note:** In Heat Pump mode – allow 3-4 minutes delay for compressor protection.
- Terminate Power before Connections.
- In Single Speed systems – Use G,GL Terminal only

Select Fan
Speed Function
1 Speed G
Or 2 speed (GH,GL)
Via 'Settings' > 'System'

Select Function
O=Energize Cool
Or
B=Energize / Heat
via 'Settings' > 'System'

Select System Function Heat
Pump or Std. Heat-Cool via
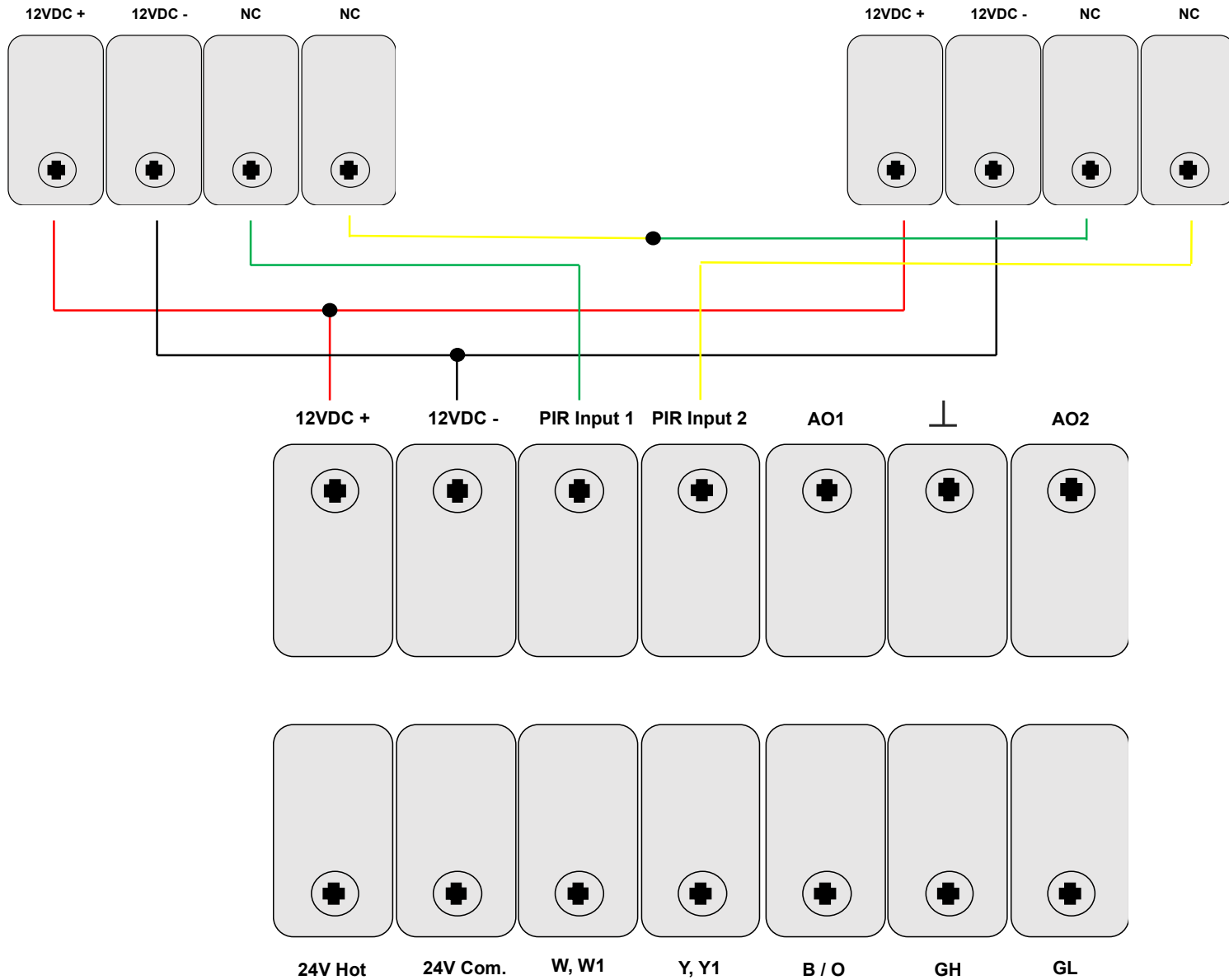'Settings' > 'System'

Energex Dream Thermostat EN118A-24

EN-118A Dream Thermostat Wiring Diagram 24V Systems

Comm. Port Door Sensors PIR Sensors 0-10V

PORT A	PORT B	DOOR A	DOOR B	PIR T1	PIR T2	12VDC +	12VDC -	0-10V A2	0-10V A1

R 24V HOT	C 24V COM	W, W1, W2	Y, Y1, Y1/W1	O/B	GH	G, GL	SENSOR 1	SENSOR 2	0-10V A3

HVAC Unit Control Terminal Remote Sensor 0-10V

Energex Dream Thermostat EN118A-24

EN-118A Dream Thermostat Wiring Diagram 110V* Systems

Comm. Port   Door Sensors   PIR Sensors   0-10V

| PORT A | PORT B | DOOR A | DOOR B | PIR T1 | PIR T2 | 12VDC + | 12VDC - | 0-10V A2 | 0-10V A1 |

| 110V HOT | 110V COM | W, W1, W2 | Y, Y1, Y1/W1 | O/B | GH | G, GL | SENSOR 1 | SENSOR 2 | 0-10V A3 |

HVAC Unit Control Terminal   Remote Sensor   0-10V

*Use the same wiring diagram for
208/230/277V Models.

Energex Dream Thermostat EN118A-24

Multiple PIR Sensors Wiring Diagram

12VDC +   **12VDC -**   **NC**   **NC**

12VDC +   **12VDC -**   **NC**   **NC**

12VDC +   **12VDC -**   **PIR Input 1**   **PIR Input 2**   **AO1**   ⊥   **AO2**

24V Hot   **24V Com.**   **W, W1**   **Y, Y1**   **B / O**   **GH**   **GL**

System Logic and output – Standard Heat / Cool Systems / FCU's

A — Standard Heat-Cool, 1 speed fan w/ Terminal 'B'

* Gray is not used

Condition	System term:	W1	Y1	G	-	B/O
	Stat wire color:	Wht	Yel	Grn	Gry	Brn
					*	
Rm Temp higher than Set Pt by 2°F	Norm Cool		■	■	-	
Rm Temp within 2°F of Set Pt	no heat; no cool				-	
Rm Temp lower than Set Pt by 2°F	Norm Heat	■		■	-	■

Volts measured to 24v com (C): ■ = 24v; = 0v

System Term R (24v feed) = Stat Red; System Term C (24v Com.) = Stat Blk

B — Standard Heat-Cool, 1 speed fan w/ Terminal 'O'

* Gray is not used

Condition	System term:	W1	Y1	G	-	B/O
	Stat wire color:	Wht	Yel	Grn	Gry	Brn
					*	
Rm Temp higher than Set Pt by 2°F	Norm Cool		■	■	-	■
Rm Temp within 2°F of Set Pt	no heat; no cool				-	
Rm Temp lower than Set Pt by 2°F	Norm Heat	■		■	-	

Volts measured to 24v com (C): ■ = 24v; = 0v

System Term R (24v feed) = Stat Red; System Term C (24v Com.) = Stat Blk

C — Standard Heat-Cool, 2 speed fan w/ Terminal 'B'

Condition	System term:	W1	Y1	GL	GH	B/O
	Stat wire color:	Wht	Yel	Grn	Gry	Brn
Rm Temp higher than Set Pt by 4°F	Hi Fan Cool		■		■	
Rm Temp higher than Set Pt by 2°F	Norm Cool		■	■		
Rm Temp within 2°F of Set Pt	no heat; no cool					
Rm Temp lower than Set Pt by 2°F	Norm Heat	■		■		■
Rm Temp lower than Set Pt by 4°F	Hi Fan Heat	■			■	■

Volts measured to 24v com (C): ■ = 24v; = 0v

System Term R (24v feed) = Stat Red; System Term C (24v Com.) = Stat Blk

D — Standard Heat-Cool, 2 speed fan w/ Terminal 'O'

Condition	System term:	W1	Y1	GL	GH	B/O
	Stat wire color:	Wht	Yel	Grn	Gry	Brn
Rm Temp higher than Set Pt by 4°F	Hi Fan Cool		■		■	■
Rm Temp higher than Set Pt by 2°F	Norm Cool		■	■		■
Rm Temp within 2°F of Set Pt	no heat; no cool					
Rm Temp lower than Set Pt by 2°F	Norm Heat	■		■		
Rm Temp lower than Set Pt by 4°F	Hi Fan Heat	■			■	

Volts measured to 24v com (C): ■ = 24v; = 0v

System Term R (24v feed) = Stat Red; System Term C (24v Com.) = Stat Blk

Energex Dream Thermostat EN118A-24

System Logic and output – Heat Pump Systems

E — Standard Heat Pump, 1 speed fan w/ Terminal 'B'

* Gray is not used

Condition	System term:	W2 Wht	Y1/W1 Yel	GL Grn	- Gry	B/O Brn
					*	
Rm Temp higher than Set Pt by 2°F	Norm Cool		■	■	-	
Rm Temp within 2°F of Set Pt	no heat; no cool				-	
Rm Temp lower than Set Pt by 2°F	Norm Heat		■	■	-	■
Rm Temp lower than Set Pt by 4°F	Elec Heat	■	■	■	-	■

Volts measured to 24v com (C): ■ = 24v; = 0v

System Term R (24v feed) = Stat Red; System Term C (24v Com.) = Stat Blk

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F — Standard Heat Pump, 1 speed fan w/ Terminal 'O'

* Gray is not used

| Condition	System term:	W2 Wht	Y1/W1 Yel	GL Grn	- Gry	B/O Brn
					*	
Rm Temp higher than Set Pt by 2°F	Norm Cool		■	■	-	■
Rm Temp within 2°F of Set Pt	no heat; no cool				-	
Rm Temp lower than Set Pt by 2°F	Norm Heat		■	■	-	
Rm Temp lower than Set Pt by 4°F	Elec Heat	■	■	■	-	

Volts measured to 24v com (C): ■ = 24v; = 0v

System Term R (24v feed) = Stat Red; System Term C (24v Com.) = Stat Blk

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G — Standard Heat Pump, 2 speed fan w/ Terminal 'B'

Condition	System term:	W1 Wht	Y1/W1 Yel	GL Grn	GH Gry	B/O Brn
Rm Temp higher than Set Pt by 4°F	Hi Fan Cool		■	■	■	
Rm Temp higher than Set Pt by 2°F	Norm Cool		■	■		
Rm Temp within 2°F of Set Pt	no heat; no cool					
Rm Temp lower than Set Pt by 2°F	Norm Heat		■	■		■
Rm Temp lower than Set Pt by 4°F	Elec Heat + Hi Fan	■	■		■	■

Volts measured to 24v com (C): ■ = 24v; = 0v

System Term R (24v feed) = Stat Red; System Term C (24v Com.) = Stat Blk

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H — Standard Heat Pump, 2 speed fan w/ Terminal 'O'

Condition	System term:	W1 Wht	Y1/W1 Yel	GL Grn	GH Gry	B/O Brn
Rm Temp higher than Set Pt by 4°F	Hi Fan Cool		■	■	■	■
Rm Temp higher than Set Pt by 2°F	Norm Cool		■	■		
Rm Temp within 2°F of Set Pt	no heat; no cool					
Rm Temp lower than Set Pt by 2°F	Norm Heat		■			
Rm Temp lower than Set Pt by 4°F	Hi Fan Heat	■	■		■	

Volts measured to 24v com (C): ■ = 24v; = 0v

System Term R (24v feed) = Stat Red; System Term C (24v Com.) = Stat Blk
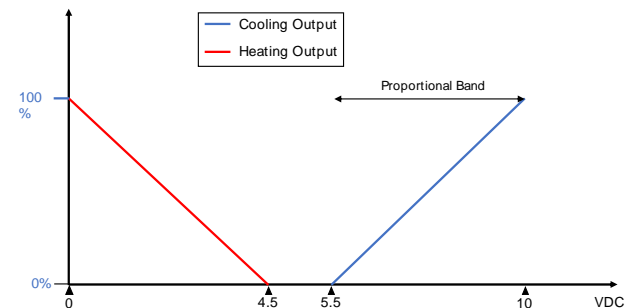
Modulating ECM Fan Coil Unit 6 Ports

Fan Controls:

(1) Fan Output Adjustment: Fan output requires minimum adjustment (AO2 Low) from 0-5 Vdc and maximum adjustment (AO2 High) from 5 to 10 Vdc. These two output voltages can be gauged by multimeter lively during setting to reflect the setting change effects. This two values are adjusted by balancing contractor that will measure minimum and maximum CFM the fan will supply and set this two values.

(2) (2) Fan Control: Fan should have option to run continuously at low speed (Fan Low) (say 25-30% of max design airflow) during occupied and dead band for delivery outside air from suite HRV or OA vent duct If there is a call for 1st. stage heating or cooling the fan would ramp up to medium speed (Fan Med) (50-60% of max design airflow) These two output voltages can be gauged by multimeter lively during setting to reflect the setting change effects. On a 2nd. stage call for heating or cooling (after the heating or cooling modulated fully open) then the Thermostat should be programmed to start ramping the fan airflow from medium to maximum design airflow for the FCU on the project.

(3) (3) Fan Mode: By pressing FAN button to toggle AUTO icon on and off to represent Auto Mode ("AUTO" show on screen) and Continuous Mode ("AUTO" icon no show). Continuous Mode will keep fan running at low speed in the least while Auto Mode will run from 0%. E.g., during dead band, Auto Mode will stop fan speed while Continuous Mode will run fan at low speed.
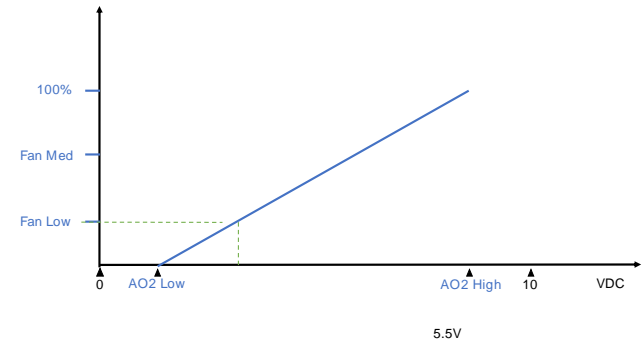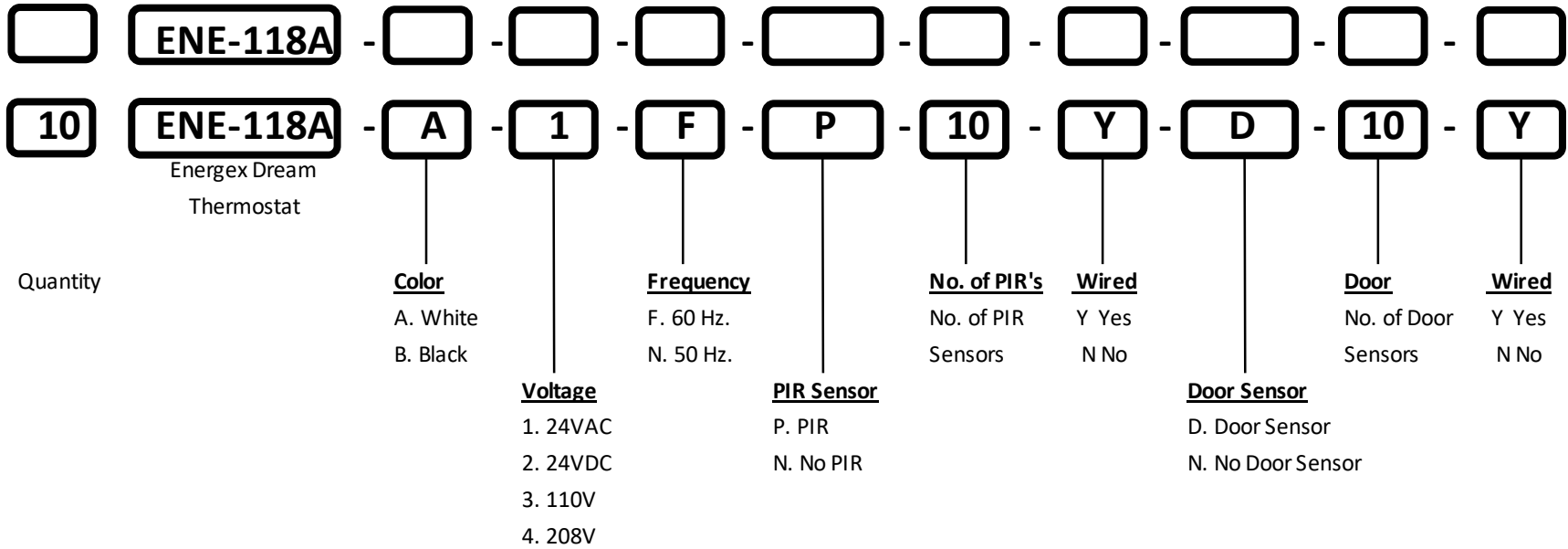
6 Port Control Valve sequence:

The control output AO1 to the 6 port control valve is 010Vdc modulating to control over 090º rotation. At 0 Vdc the ball valve is in 0º position and 100% heating At 0–4.5 Vdc the valve modulates heating over 30º rotation At 5 Vdc the valve is in 45º position and both Heating and Cooling is closed At 5.510Vdc the valve modulates cooling over 30º rotation At 10 Vdc the valve is in 90º position and 100% cooling 1 Vdc dead band insures no heating and no cooling when set point is satisfied, there is no possibility of water infiltration from hot water to chilled water system.

Ordering and specification Information

ENE-118A - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐

10 **ENE-118A** - **A** - **1** - **F** - **P** - **10** - **Y** - **D** - **10** - **Y**

Energex Dream
Thermostat

Quantity

Color
A. White
B. Black

Voltage
1. 24VAC
2. 24VDC
3. 110V
4. 208V

Frequency
F. 60 Hz.
N. 50 Hz.

PIR Sensor
P. PIR
N. No PIR

No. of PIR's
No. of PIR
Sensors

Wired
Y Yes
N No

Door Sensor
D. Door Sensor
N. No Door Sensor

Door
No. of Door
Sensors

Wired
Y Yes
N No

Please consult our sales support team at 1 866 787 1836 for help in ordering, scheduling and specifications.

System Warranty

All parts, components and the workmanship are guaranteed for a period of one year. The warranty period begins at the date of installation and covers against any defects or performance faults.

Energex Inc. will provide with 24 hours a day service hot line and the typical turn-around time for repair is under 48 hours. The maintenance staff of the hotel will be fully trained in the workings of the system and should be able to troubleshoot any problem in house. As well, several spare systems will be left at the hotel for immediate repairs by the staff if necessary. Additional warranty can be purchased after the warranty period is over for a cost of $1.50 per room, per month.

Energex Power Saver Systems Inc. and/or it's subsidiaries and it's affiliates ("The manufacturer") warrants it's products hereinafter referred to as "the product" or "products" to be in conformance with it's own plans and specifications and to be free of defects in materials and workmanship under normal use and service for a period of twelve (12) months from the date of installation by a manufacturer authorized personnel. The manufacturer obligations shall be limited within the warranty period, at it's option, to repair or replace the product or any part thereof.

Intellectual Property Warranty. Energex Inc. represents and warrants that the products sold and serviced by its authorized distributors, the Equipment and the Documentation, or any part of any of the foregoing, will not infringe or constitute a misappropriation of any right of any third party, including any copyrights, mask work rights, patent rights, trademark rights, trade secret rights or confidentiality rights. All patents, rights, control logic and AI functions are exclusively owned by Energex Inc.

This warranty does not apply in the following cases: misuse, failure to follow operating and maintenance instructions, alterations, abuse, accident or tampering and repair by anyone other then the manufacturer. Any use with 3rd. Party or unauthorized components by Energex Nulls and voids all warranties implied.

This warranty is exclusively and expressly in lieu of all other warranties, obligations or liabilities whether written, oral, expressed or implied, including any warranties of merchantability or fitness for a particular purpose, or otherwise. In no case shall the manufacturer be liable to anyone for any consequential or incidental damages for breach of this warranty or any other warranty.