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Solaira SMaRT 16-DV Variable Controller User Manual

Contents

Solaira SMaRT 16-DV Variable Controller

Specifications

- Electrical Rating: Maximum load 16A @110-120V or 208-240VAC 50/60HZ
- Temperature Range: 32.0°F to 80.0°F (0.0°C to 26.7°C)

Product Usage Instructions

Introduction
The Solaira SMaRT 16-DV Control is designed to provide optimum comfort settings in your specific area. It has a 1 to 5 step setting.

To increase output
Press and release the red button to increase the output to full.

To increase in increments, press and hold the red button until the desired number is reached.

To reduce output

- Press and release the red button to reduce the output to OFF.
- To reduce in increments, press and hold the red button until the desired number is reached.

Features
The Solaira SMaRT 16-DV Control includes the following features:

- Optional temperature monitor (sold separately)

Installation
The Solaira SMaRT 16-DV Control can be installed in a vented location and does not have to be installed in the immediate area of the heaters.

Occupancy Sensor Installation
If you decide to utilize the optional Occupancy Sensor (sold separately), follow these guidelines:

- Mount the occupancy sensor 8′ (2.5 + meters) above the floor.

- Ceiling mounting is preferred but not essential.
- Do not mount the occupancy sensor directly in line with the heaters output, highly reflective surfaces, radiators, thermostatically controlled heaters, or open doorways with people walking past.

Controller Mounting
Do not mount the controller directly on any flammable material. The controller must be mounted via standoffs (supplied & specified by others) to aid in heat dissipation, as per local building and NEC code.

Initial Start Up with Optional Occupancy Sensor
Follow the installation instructions provided with the optional Occupancy Sensor to set up and activate the sensor.

FAQ

- **Q: Can I install the Solaira SMaRT 16-DV Control myself?**

  A: No, the Solaira SMaRT 16-DV Control must only be installed by a certified electrician to local and national electrical codes.
- **Q: Can I use any other control interface with the** SMaRT-16DV?

  A: No, the SMaRT-16DV can only be used with approved accessories. The use of any other control interface is not recommended.
- **Q: Can I pair the Solaira SMRTOCC40 and SMRTOCC60 with the SMaRT16-DV?**

  A: No, the Solaira SMRTOCC40 and SMRTOCC60 are for standalone controls only and may not be paired with the SMaRT16-DV. Failure to comply may result in controller damages.

Solaira SMaRT 16-DV Variable Controller Installation & User Manual

KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE

SAFETY WARNING
ALL INSTALLATIONS/SERVICE MUST ONLY BE PERFO RMED BY A LICENSED/CERTIFIED ELECTRICIAN TO LOCAL AND NATIONAL ELECTRICAL CODE (NEC).

WARNING: SHOCK AND FIRE HAZARD:

- Serious injury or death could occur
- Disconnect ALL power sources before removing cover. Power should only be re-connected after electrical installations are complete and cover replaced
- Be certain the power source conforms to specifications outlined on heater label
- Maximum heater load SHOULD NOT EXCEED 16 AMPERE
- Control MUST BE PROPERLY grounded. Assure to connect ground wire green wire from heater to ground connection from electrical supply, not to a live or "hot" conductor.
- Engineer/Electrician/Installer to determine suitability of this appliance in intended application and compliance with all local, state/provincial and National electrical Code (NEC) requirements

- Do not use locations containing hazardous or explosive atmospheres.

ELECTRICAL RATING

Maximum load 16A @110-120V or 208-240VAC 50/60HZ

WARNING SERIOUS INJURY OR DEATH COULD OCCUR, DISCONNECT ALL POWER PRIOR TO SERVICE

SPE-1000 CANADA INSPECTED

Due to ongoing product improvements, specifications and dimensions are subject to change without notice and without incurring obligations.

INTRODUCTION

- The Solaira SMaRT 16-DV Control has a 1 to 5 step setting allowing you to find the optimum comfort setting in your specific area.

- To increase output to full output, press and release red   button.

- To increase in increments, press and hold the red   button until the desired number is reached.

- To reduce output to OFF, press and release red   button.

- To reduce in increments, press and hold the red   button until the desired number is reached

FEATURES

- Variably control your Solaira° heaters, up to a max load of 16A.
- Weatherproof control for exposed, wet conditions (it is the electrician responsibility to assure correct water tight connection, this may necessitate replacing included watertight strain relief)
- Variable Control – Ability to adjust output to desired comfort level
- Soft Start – Zero current switching point which can extend emitter lamp life

- Input for Temperature Monitoring Accessory – Solaira SMaRT 16-DV Variable control is input ready for a local (on controller) temperature monitor that is sold separately.

OPTIONAL ACCESSORIES (Sold Separately)

WARNING: The SMaRT-16DV can be used with the following approved accessories. Use of any other control Interface is not recommended.

- Handheld IR Remote (SMRTVMT): Is an optional handheld remote that communicated via IR to either the SMaRT Controller or Optional Wall Switch (SM-WSD). Must be in line of sight of the controller.
- Wall Switch (SM-WSD): Is a mounted wall switch unit that provides control of a the SMaRT-16DV, that may be remotely located. The remote-control wall switch unit is supplied mounted on a single gang faceplate, ready to be fitted to a single gang certified J-box. As supplied the unit must be installed indoors in a dry environment, if the unit needs to be installed outdoors or in a wet environment it must be installed onto a certified J-box, which is itself installed inside a water resistant, IP65 rated enclosure and to all appropriate local and NEC codes. The SM-WSD can also interface with the Handheld IR Remote SMRTVMT, which must be in line of sight of the SM-WSD.
- Occupancy SENSOR (SMRTOCC): A passive infrared (PIR) external sensor, with a range of approximately 12m, can monitor the selected area ensuring heaters only switch on when the zone is occupied.
- Temperature Monitoring Accessory: This will allow user to pre-set the minimum temperature level that will allow the controller to operate when a temperature monitor is purchased separately. Note: the temperature monitor is calibrated in Celsius; please use the following table to aid in set up:

Fahrenheit	Celsius	Fahrenheit	Celsius
32.0	0.0	55.0	12.8
36.0	2.2	60.0	15.6
40.0	4.4	65.0	18.3
45.0	7.2	70.0	21.1
50.0	10.0	75.0	23.9
		80.0	26.7

Temperature Monitor (SMRTVTEM-R): The controller can be equipped with a remotely located temperature sensor that monitors the temperature of the desired zone and inhibits the heaters when the temperature exceeds a pre-determined set point of between 41°F (5°C) to 77°F (25°C).

WARNING: Use of standalone Solaira SMRTOCC40 and SMRTOCC60 are for standalone controls ONLY and may not be paired with SMaRT16-DV. FAILURE TO COMPNY MAY RESULT IN CONTROLLER DAMAGES.
WARNING: Solaira SMaRT 16-DV Variable control is a high power electrical device and MUST ONLY BE INSTALLED BY A CERTIFIED ELECTRICIAN TO LOCAL AND NATIONAL ELECTRICAL CODE.
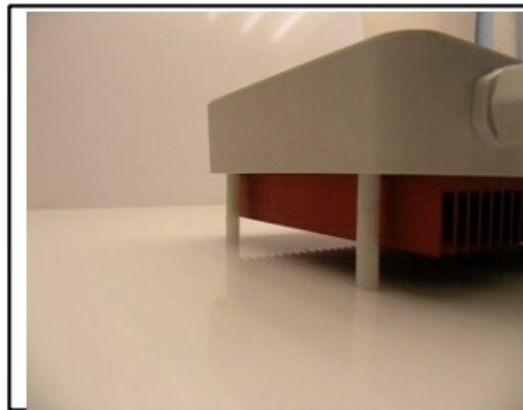
INSTALLATION

The control can be installed in a convenient VENTED location and does not have to be installed in the immediate area of the heaters. The unit is shipped with the Occupancy sensor/pushbutton input fitted with a wire link which

continually re-triggers the "ON" timer so that it never expires.

If the user decides to utilize the optional Occupancy Sensor (Sold Separately), the occupancy sensor should be mounted 8' (2.5 + Meters) above of the floor. Ceiling mounting is preferred but not essential. The Optional Occupancy monitor must not be mounted directly in line with the heaters output, highly reflective surfaces, radiators or other thermostatically controlled heaters or open doorways with people walking past.

WARNING: CONTROLLER MOUNTING

DO NOT mount the controller directly on any flammable material i.e. wood or any other combustible. Controller must be mounted via standoffs (supplied & specified by others) to aid in heat dissipation, as per local building and NEC code

INITIAL START UP WITH OPTIONAL OCCUPANCY SENSOR

- Occupancy Sensor (SMRTOCC) (sold separately), it takes 60 seconds to set before detection takes place
- Optional Occupancy Sensor continues to monitor the area and will reset to the set time every time it detects movement.
- Before testing ensure the wiring is correct.
- Temperature trip point has already been pre-set at the factory.
- Timer is preset to 1 minute but can be adjusted using timer trimmer potentiometer to 1-60 minutes.
- The expected detection area can now be "walked tested" using the diagram shown in mind. The area should be crossed in various directions to ensure coverage is as expected.

DISPLAY FEATURES

Display shows 't'	The unit is turned OFF as the ambient temperature is above the trip level set by TEMPERATURE SETPOINT.
Display shows "0"	The output is OFF
Display shows "1", "2", "3", "4"	The unit is ON at the indicated power level
Display shows 'F	The unit is set to FULL output.
Display flashing "."	The "ON" timer has expired and is waiting to be re-triggered by the Occupancy sensor (i.e. no movement detected for "ON" time)
Display "."	The unit is in Standby mode pressing the optional fully on remote control POWER button will toggle the power ON and OFF.

You can check the remote control is transmitting by observing the "." (dot) flashing rapidly.

TROUBLE SHOOTING

- Heater does not come on, t in display….The heater pre-set trip temperature IS ABOVE THE AMBIENT TEMPERATURE. This can be adjusted using the temperature set point potentiometer.
- Heater does not come on, flashing DOT…The controller is waiting for input from optional occupancy sensor. If your system does not utilize the occupancy sensor, then wire jumper (factory installed) must be in place in PIR SENSOR INPUT on pins SIG IN and COM. If the jumper is not in place, controller will not operate.

SPECIFICATIONS

Max load at 20°C ambient - Voltage - Power Consumption Occupancy Sensor (option) Pushbutton Timer (option) Set Time Period Temperature Set point - Factory Set Temperature trip point 2 heater Installation - Ambient Operating Temperature IP Rating - Max Unit Operating Temperature - ***Occupancy Monitor*** (optional)	- 3200W @ 208-240VAC or - 1600W @ 120VAC - 120Vac or 208-240Vac +/- 10% 50/60Hz - 50mA - See below Momentary or Toggle 1-60 minutes - 5°C to 25°C - 25°C - Must be fitted in Parallel - -20°C to 30°C IP65 - 65°C - 12V dc

Operating Voltage Direction Detection	90° Adjustable - 45' (18 Meters)

WARNING: Solaira SMaRT 16-DV Variable control is a high-power electrical device and MUST ONLY BE

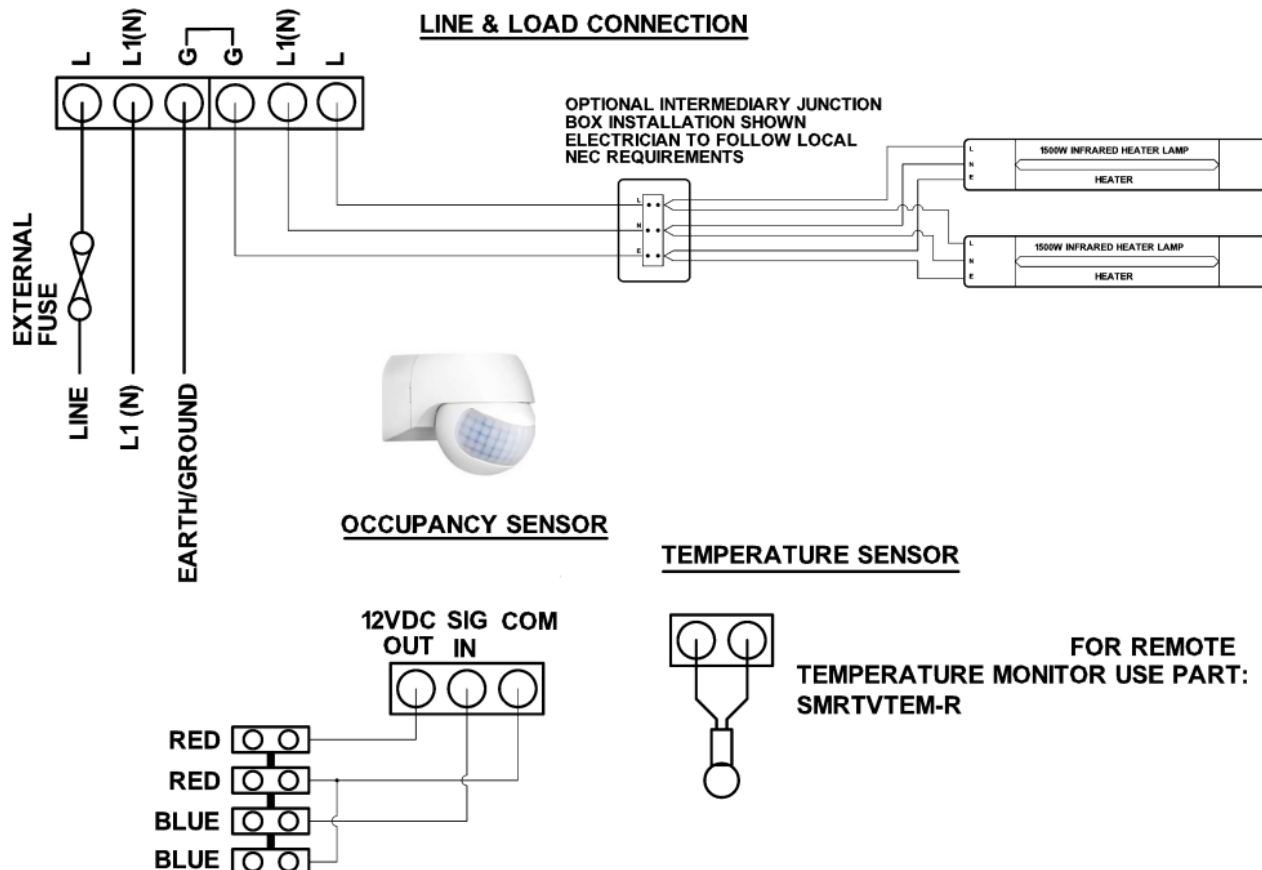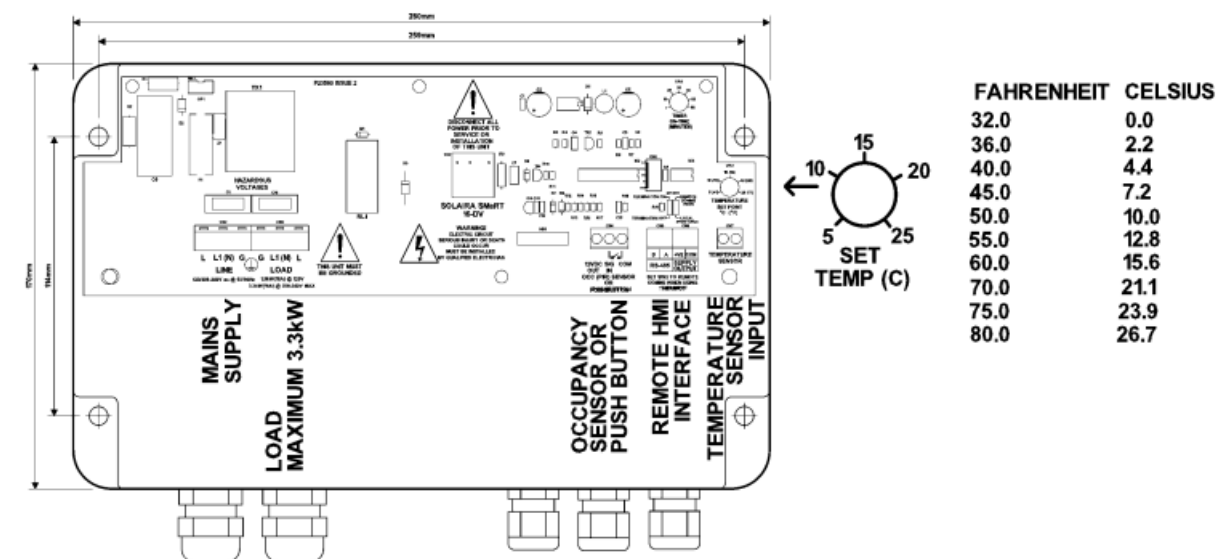INSTALLED BY A CERTIFIED ELECTRICIAN TO LOCAL AND NATIONAL ELECTRICAL CODE

SMaRT 16-DV ILLUSTRATIVE WIRING DIAGRAM*

*Connection diagram is for illustrative purpose only. Installation must be carried out by certified electrician to local, state/provincial and National Electric Code (NEC) requirements. Inforesight Consumer Products Inc. assumes no responsibility for the heaters or controller electrical plan or installation.

WARNING SERIOUS INJURY OR DEATH COULD OCCUR, DISCONNECT ALL POWER PRIOR TO SERVICE

WARNING: RISK OF INJURY OR DEATH INSTALLATION OR SERVICE FOR
* ALL SOLAIRA HEATERS AND CONTROLLERS SHOULD BE INSTALLED BY CERTIFIED ELECTRICIANS TO LOCAL STATE/PROVINCE NEC CODE

FAHRENHEIT	CELSIUS
32.0	0.0
36.0	2.2
40.0	4.4
45.0	7.2
50.0	10.0
55.0	12.8
60.0	15.6
70.0	21.1
75.0	23.9
80.0	26.7

LINE & LOAD CONNECTION

OPTIONAL INTERMEDIARY JUNCTION BOX INSTALLATION SHOWN ELECTRICIAN TO FOLLOW LOCAL NEC REQUIREMENTS

1500W INFRARED HEATER LAMP — HEATER

1500W INFRARED HEATER LAMP — HEATER

OCCUPANCY SENSOR

TEMPERATURE SENSOR

FOR REMOTE TEMPERATURE MONITOR USE PART: SMRTVTEM-R

12VDC OUT   SIG IN   COM

RED
RED
BLUE
BLUE

FRONT PANEL

F ○ ▲ ▼ FOR FULL OUTPUT DAB ▲ ONCE, DISPLAY CHANGES TO "F" TO SWITCH OFF DAB ▼ ONCE, DISPLAY CHANGES TO "0" TO CHANGE OUTPUT INCREMENTALLY PRESS AND HOLD ▲ OR ▼ AS REQUIRED

t ○ ▲ ▼ TEMPERATURE TRIP SET POINT, THE CONTROLLER SWITCHES OFF AND THE DISPLAY SHOWS "*" WHEN THE AMBIENT TEMPERATURE REACHES THIS LEVEL

TROUBLESHOOTING

Temperature Set Point

Temperature set point allows user to control the MINIMUM TEMPERATURE for heaters to come on. If the ambient temperature is above the pre-set level, the heater control will show "t" and WIL NOT TURN ON. You can reduce the minimum temperature to 5°C

Temperature Sensor Input (Sensor Not Included)

For local temperature sensor input or optional remote temperature sensor (SMRTVTEM-R) input. The local temperature sensor is not included with the SMaRT 16-DV controller. If the user wishes to use a temperature monitoring feature, simply purchase separately and connect the temperature sensor.

FLASHING DOT ON CONTROL PANEL DISPLAY

If the controller is used WITHOUT OPTIONAL OCCUPANCY SENSOR (SMRTOCC), then "wire jumper" must be installed in pins SIG and COM as shown. If the jumper is not installed, the controller senses an open circuit and will switch OFF. Your controller comes with the jumper installed and it should only be removed when a sensor is installed.

Wire jumper installed for use WITHOUT optional Occupancy SENSOR (PIR)

PLEASE NOTE: If you are using a SMRTOCC with the Solaira SMaRT 16DV and 34DV, the timer function on the SMaRT Wall Switch SM-WSD will be overridden if the SMRTOCC has been activated.
If you are not using a SMRTOCC, the Link that is fitted as standard between the SIG IN / COM 'MUST' be removed otherwise the timer function on the SMaRT Wall Switch SM-WSD will not operate.

LIMITATION OF LIABILITY

It is understood and agreed that seller's liability whether in contract, in tort, under any warranty, in negligence or otherwise shall not exceed the return of the amount of the purchase price paid by purchaser and under no circumstances shall seller be liable for special, indirect or consequential damages. The price stated for the equipment is a consideration in limiting seller's liability. No action, regardless of form, arising out of the transactions may be brought by purchaser more than one year after the cause of action has accrued.

WARRANTY

1. SOLAIRA CONTROL products are guaranteed to be free from mechanical and electrical defects for a period of one year from date of shipment under normal use and service provided installation is made in accordance with manufacturers' recommendations.
2. Parts deemed defective shall be repaired or replaced at manufacturers option and at manufacturers expense but shall not include foreign or federal excise taxes, state or municipal sale or use taxes, all such taxes not limited to the foregoing being responsibility of the purchaser.
3. No charge for travel and/or mileage will be allowed to purchaser.
4. SOLAIRA reserves the right to make changes in design or make any improvements on any products. The right is always reserved to modify our equipment because of new technology, underwriter's requirements and/or government regulations.
5. The following are not covered under warranty:
   - INSTALLATION OF CONTROL BY NON-CERTIFIED ELECTRICIAN.
   - Failure from neglect, abuse, careless handling and mis-application of unit.
   - Failure to observe guidelines for installation or improper voltage hook-up.
   - Failure caused by improper installation and not following local, state/provincial and federal electrical guidelines
   - Unless specifically allowed by SOLAIRA CONTROLS, no other charges may be included under warranty.

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Due to ongoing product improvements, specifications and dimensions are subject to change without notice and without incurring obligations.

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- IOM ▪ SMaRT-16DV

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Documents / Resources

Solaira SMaRT 16-DV Variable Controller [pdf] User Manual
SMaRT30-DV, SMRTOCC40, SMRTOCC60, SMaRT 16-DV Variable Controller, SMaRT 16-DV, Variable Controller, Controller

References

- **User Manual**