

***SDM-4 Digital Thermometer with LED display and optional Alarm***

Electronic, digital temperature monitor with optional Alarm Relay or Buzzer.



This controller has an internal, accurate, programmable temperature processor, that is self calibrating and does not require any maintenance or adjustments. One external temperature sensor probe is connected via a screw terminal located on-board. Some models may have also a second sensor wired up for special functionality, like for instance to measure the absolute temperature or the temperature difference at two separate locations. Standard models have large, 3 digits LED display to indicate the measured temperature in selectable units, either Fahrenheit or Celsius.

Some models can also have an optional, permanent or programmable Alarm setpoint function. The alarm can be displayed as flashing digits and/or the controller can have an optional Alarm Relay or Alarm Buzzer installed on-board. Another optional function is a display of the Minimum and/or Maximum temperature recorded during operation. All settings are retained in the internal, non-volatile memory.

Models available for temperature ranges from -40F to + 255F ( -40C to +124C ) and up to -60F ( -50C ) to +960F ( +515C ), depending upon the controller model and if special thermistor or RTD sensor probe is used.

This thermometer is designed for 100% duty operation.

Custom temperature ranges, modes of operation and probe types available upon request.

Normally, after the power-up, the display will indicate the sensed temperature. In some models however the initial display can indicate "OFF" ( or any other custom text ), the preset Alarm setpoint or another data, as requested by customer specifications. The optional remote control contact input can also be used to initiate special sequence for the display or Alarm preset, if required by the customer. In general, the sequence of display indications is programmable either by the user or can be ordered as pre-programmed model.

NOTE, that the thermometer features are customizable and may be ordered with different functionality.

Using a special procedure, the user can modify many features of the controller, including the temperature ranges, the limits and the modes of operation.



Front view of the standard SDM-4 controller ( with Grey and Black face plate ). The LED display colors available in Red, Green or Blue.



Flush face plate with Black label.



SDM-4 thermometer with Semi-Flush face and with Black Label.



SDM-4 Digital Thermometer Set including the Sensor Probe, in-line fuse holder and the mounting hardware. Semi-Flush face shown.

**Temperature Sensor PROBE:**

A number of standard Temperature Probes is available for this controller, depending upon the application. Most probes are small in size. The most popular is a probe appx. 25 mm long and 5 mm in diameter ( 1"lg. x 0.2" dia. ). The probes have two thin wires attached at one end. The other end is sealed and can withstand exposure to unlimited moisture.

The wiring can be extended with *any type of a 2-conductor cable* up to appx. 150 m ( 500 ft. ).

Standard thermistor probes have 1% accuracy and the operating ranges vary from -40F to +255F (-40C to +124C) up to -60F to +960F (-50C to +515C) when special thermistor or RTD probe is used.

The probes are enclosed in a non-corrosive housing that may be Stainless Steel, chrome plated, plastic, black anodized or brass with two PVC or Teflon jacketed leads, sealed with epoxy resin at the wire end to prevent moisture penetration.

Note, that it is advisable to protect the leads with additional coat of, for instance, silicon sealant against possible excessive moisture condensation.

**Electrical:**

SDM-4 thermometer models are available for 120Vac, 208-250Vac, 12Vac, 24Vac, 50Hz /60Hz, as well as 12V or 24V DC. The supply voltage must be specified when ordering. The controller electronics is protected by one 20 mm, removable fuse that should be installed in the included in-line fuse holder or in clips on the controller PCB, depending upon the model.

Standard models can have one on-board Alarm relay, SPST, Normally Open. The relay can switch loads up to 30Amp, 250Vac max. ( 40 Amp is optional ). The relay contacts are completely isolated from the controller supply, depending upon the chosen method of wiring.

Some models available with a small, low power relay installed, with contacts rated at 1Amp/250V max.

**Options:**

Various additional options are available for the SDM-4 thermometers, including:

- |  |   |
|--|---|
| <i>Operation with One or Two Sensor Probes,</i>      | <i>High, Low or Temperature Range Alarm,</i>      |
| <i>Temperature Difference Monitoring</i>             | <i>Alarm Relay or Alarm Buzzer,</i>               |
| <i>Adjustable Differential ( hysteresis ),</i>       | <i>Remote ON/OFF or Enable contact and switch</i> |
| <i>Permanent or Programmable Temperature Limits,</i> | <i>Additional Remote display</i>                  |

See the complete "List of Options" for details.

Many Temperature and Operating ranges, as well as various types of relays and wiring methods may be supplied upon the customer request.

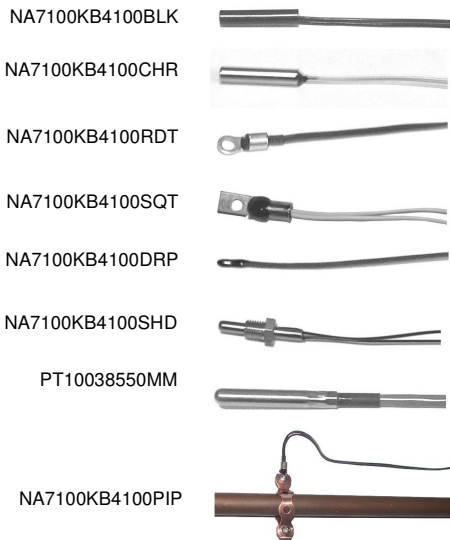
**Installation:**

SDM-4 controllers are normally shipped without enclosures (optional) and are designed to fit in a standard 1-gang electrical box or in a panel.

Two types of face plates are available for Semi-Flush or Flush mounting.

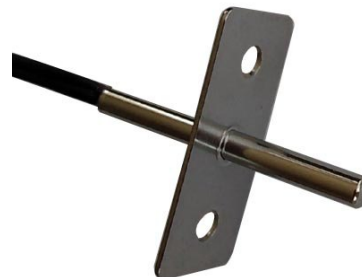
The front plastic overlay with keys can be installed on either a customer supplied face plate or the standard Mounting Plate included in the kit. All mounting hardware, screws and wiring connectors are included. When correctly installed, there are no screws visible on the face plate.

**Applications:** Sauna Control or Monitoring, Heaters, Coolers, Steam Rooms, Spa, Smokers, Yoga Room, Solar Heating, Freezer, Wine Cellar, etc...

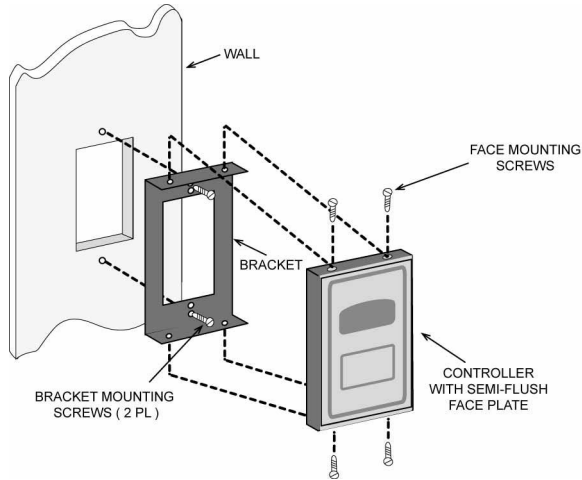


Variety of available temperature sensor probes.

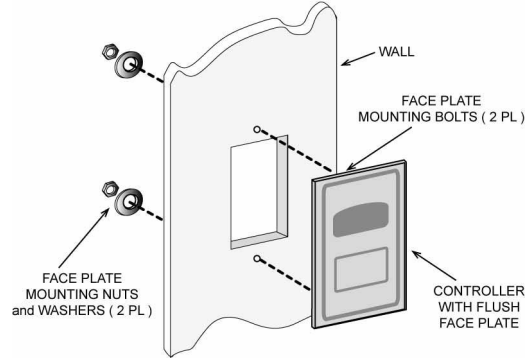
NA7100KB4100SSFLG



Temperature sensor probe with Flange



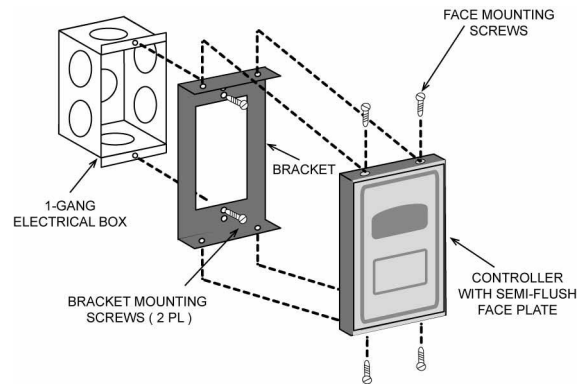
INSTALLATION EXAMPLE: FLUSH IN A WALL



INSTALLATION EXAMPLE: SEMI-FLUSH IN A WALL



PPB-1 REMOTE ON/OFF/RESET PUSH-BUTTON



INSTALLATION EXAMPLE: SEMI-FLUSH IN A BOX

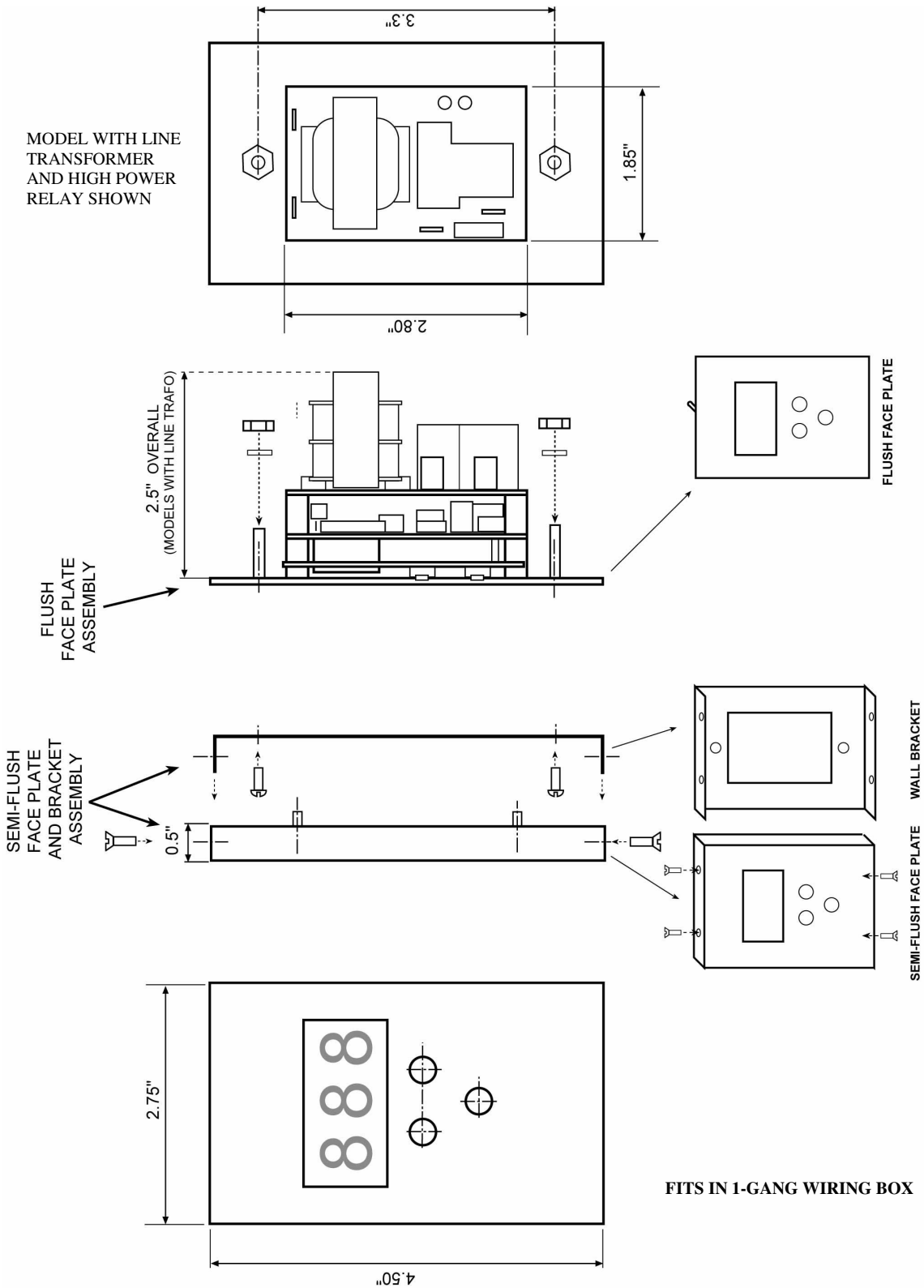


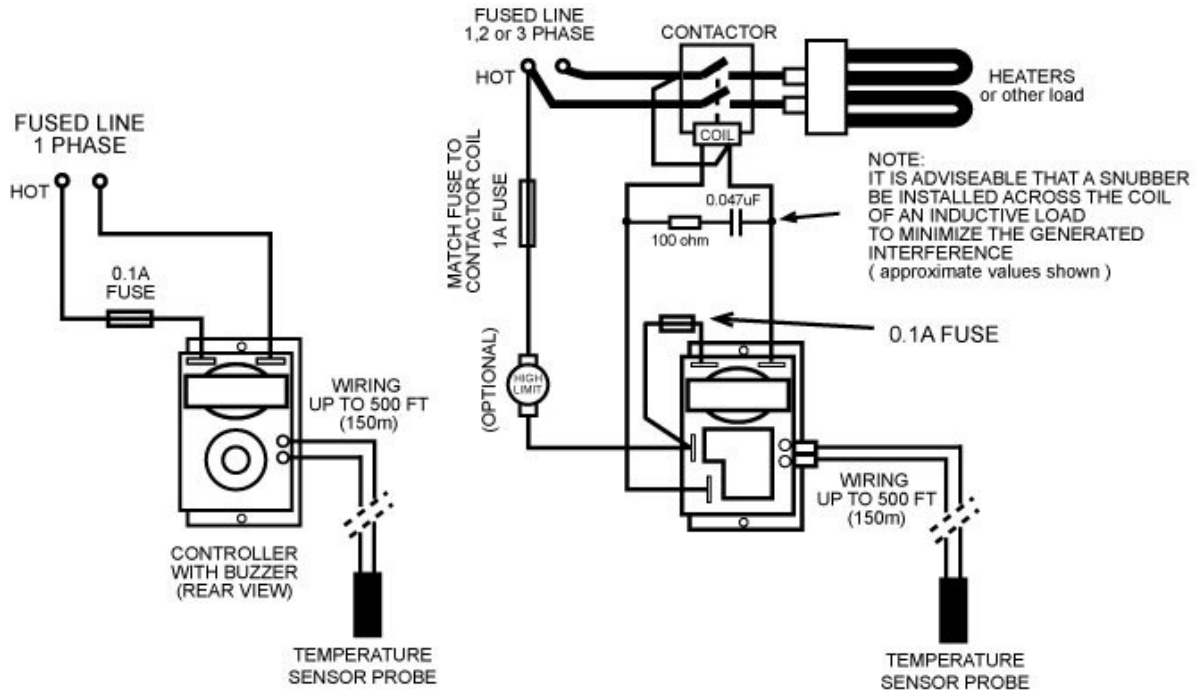
OPTIONAL SENSOR PROBE PLATES  
( PLASTIC PPP-4 or STAINLESS STEEL PPS-4 )



OPTIONAL SENSOR PROBE PROTECTIVE SHIELD ( PG-5 )

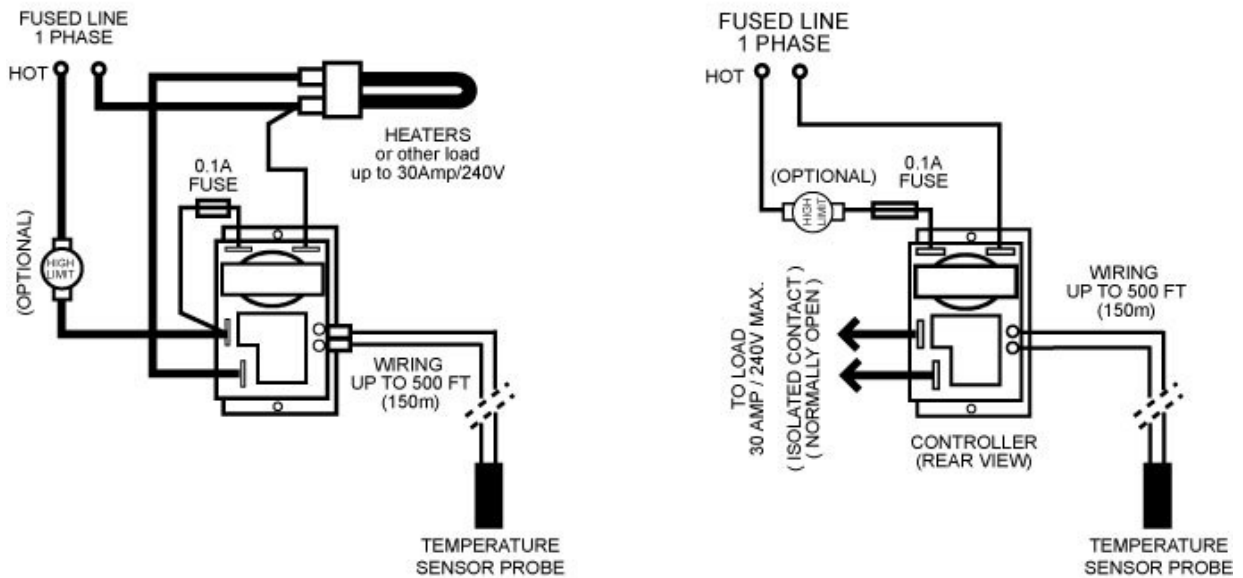
**Series SDM-4  
Digital THERMOMETER**





WIRING EXAMPLE WITH ON-BOARD ALARM BUZZER

WIRING EXAMPLE WITH ALARM USING EXTERNAL CONTACTOR TO BOOST THE LOAD POWER



WIRING EXAMPLE WITH POWER LINE SUPPLY COMMON FOR THE CONTROLLER AND THE LOAD

POWER LINE SUPPLY SEPARATE FOR THE CONTROLLER AND THE LOAD

Following is an example of specifications for a selected model with Alarm relay. Note that all thermometer ranges, electrical as well as mechanical specifications can be modified to the customer requirements or via the special setting procedure.

Example model: **SDM-4-HP-120-H1-FN40P255-RFN40P254...**

<b>SPECIFICATIONS:</b>	<b>VALUE</b>	<b>NOTES, COMMENTS</b>
<b>Electrical:</b>		
Supply Voltage:	105-130Vac, 50/60 Hz	208-250Vac, 50/60Hz, 12/24V AC/DC
Supply Current (controller):	25 mA RMS max.	May be lower for different voltages, relays and display brightness or color
Alarm relay:		
Max. Switched Load:	30 Amp, 240Vac max.	May be different for other relay models
Switching Reliability:	10,000,000 electrical 10,000,000 mechanical	For AC load
Oper. Ambient temperature:	-4 to +158F (-20 to +70C ) (standard)	-20 to +90C extended with high temp LEDs
Temperature range:	-40 to +255F (-40C to +124C) (standard)	Can be extended up to 960F ( 515C )
Alarm. Preset Range:	-40 to +255F (-40C to +124C )	Other ranges available
Temp. reading accuracy:	+/- 1%	Over the operating range
Alarm Hysteresis (differ.):	+1F, -0F (+0.5C, -0C )	Can be set to any value on request
Temp. Display resolution F:	1 F	Other available on request
Temp. Display resolution C:	1 C	Other available on request
Probe Temperature Range:	-40 to +255F (-40 to +124C ) (standard)	Extended temp. avail. on custom orders
Probe wiring distance:	500 Ft. (150 m ) max.	Can be extended on special order
Probe dimensions:	1" x 0.2" dia ( 25mm lg. x 5mm dia. )	Chrome plated or other probes per request
LED Display:	3 digits, 0.56" high	
Display color:	Super RED, GREEN or BLUE	Different colors upon request
<b>Mechanical:</b>		
Face plate:	Painted Metal	Flush or Semi-Flush mounted face plate
Face plate dimensions:	2.75" x 4.5" ( 70mm x 115mm )	
Mounting Bracket:	Metal, baked powder paint	Semi-Flush , depending upon the model
Mounting bracket dimensions:	2.7" x 4.45" ( 69mm x 113mm )	For Semi-Flush models
Controller dimensions::	2.85" x 1.85" x 2.3" (HxWxD) ( 73mm x 47mm x 58mm )	Models with transformer
Overall weight:	300 gm	Models with transformer
Shipping Packaging:	Carton with bubble padding	
Accessories pack:	Mounting screws and nuts, if needed Face plate, Bracket and Lexan decal: 1 pc each In-line fuse holder + 20mm fuse: 1 pc	