SDT-4PB Digital TIMER with LED display and Powerful Relay

This digital, programmable UP or DOWN interval timer (stopwatch) is designed for 100% duty operation.

The timer is programmed via the UP and DN keys located on the face. SDT-4 models are programmable for any number of seconds, minutes, hours, or days, depending upon the model and the selected mode of operation. Custom modifications are available upon request.

The ON/OFF key, when pressed, will Start or Stop the timer .
After the power-up, in standard models, the ON/OFF key will automatically preset the timer to the most recent setting, the Maximum Time or a custom Default value, depending upon the model and the selected mode of operation.

In standard models, if the user presets the timer first, before the start, then the ON/OFF key will start (or re-start) the timer with that value. Customized models can behave differently, if required. All settings and preset values are retained in the internal memory.

In standard models, if the user alters the timer setting during the count–down (or count-up), the timer is immediately set to the new, selected value without interruption in counting.
Note, that it is possible to change the mode of operation in order to prevent the user from changing the count during counting.

The timer modes and operation are customizable and can be set to perform differently.

After the counting starts, the display shows the current time count, until it expires.
A flashing "-" , "**.**" or "On" sign indicates that the count-down (or count-up) is pending.
During the count-down (or count-up) pending, the on-board relay is energized.
When the timer is not running, the relay is de-energized and the display shows the text "OFF" or "0", depending upon the model.

Front view of the SDT-4PB timer (with Grey and Black face plate). The LED display colors available in Red, Green and Blue.

A reversed relay action can be set up by selecting a different mode of operation or by requesting a different model.

The timer can be stopped or reset at any time by pressing the ON/OFF key.
Alternatively an optional, external Remote Control Start/Stop switch, if installed, can be used.

SD4-PB timer features and modes of operation are highly programmable and can be modified by the user via the keys on the face plate.
There are many other options available for this timer. See the "List of Options" document for details.

SDT-4PB Timer with Semi-Flush face and with Black Label.

SDT-4PB Digital Timer Set including the in-line fuse holder and mounting hardware. Model with Semi-Flush face shown.

Flush face plate with Grey Label.

SDT-4PB Timer with Vandal Proof Push-buttons

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1

Electrical:

SDT-4PB timer models are available for 120Vac, 208-240Vac, 12Vac, 24Vac, 50/60Hz 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 or on-board fuse holder.
Standard models have one low power or high power on-board relay, SPST, Normally Open. Other relay types available upon request.
The high power relay can switch loads up to 30 Amp/250V (40 Amp is optional) and the low power relay can switch up to 1 Amp/250V load.
The relay contacts can be completely isolated from the controller supply, depending upon the chosen method of wiring.

Options:

Various, additional options are available for the SDT-4PB timer, including:

> *Count UP or count DOWN mode,*
> *Cycling or Accumulating Time UP or DOWN count,*
> *Delay-Before-Start,*
> *High or Low Limit external Temperature Probe input,*
> *External Temperature Probe input for accumulated time count,*
> *Input for external Remote Start/Stop contact,*
> *Input for external Remote Enable or Pause contact,*
> *Vandal Proof push-buttons*
> *Alarm Relay with isolated low power (1 Amp, 250V) or high power (30 Amps, 250V) contacts,*
> *Alarm Buzzer,* etc…

See the "List of Options" for details.
Many Timer ranges, as well as various types of relays and wiring methods can be supplied upon the customer request.
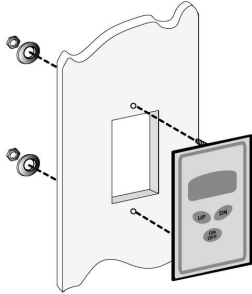
Installation:

SDT-4PB timers are normally shipped without enclosures (optional) and are designed to fit in a standard 1-gang electrical wiring box or in a panel.
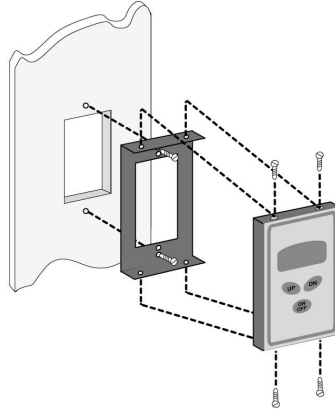The plastic overlay (decal) can be installed on either a customer supplied face plate or on the standard Mounting Plate included in the kit.
All mounting hardware, screws and wiring connectors are attached. When correctly installed, there are no screws visible on the face plate.

Applications: Sauna Control, Heaters, Coolers, Steam rooms, Tanning beds, Pumps, Fans, Motor control, Smokers, etc...

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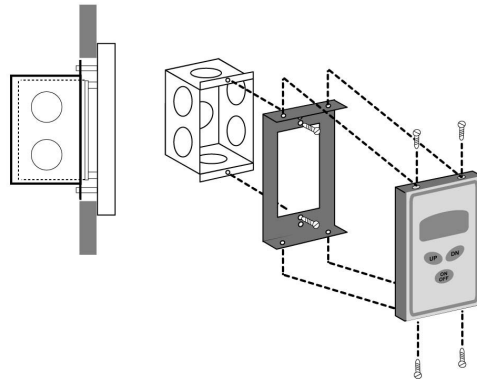
KERA TECHNOLOGIES INC.
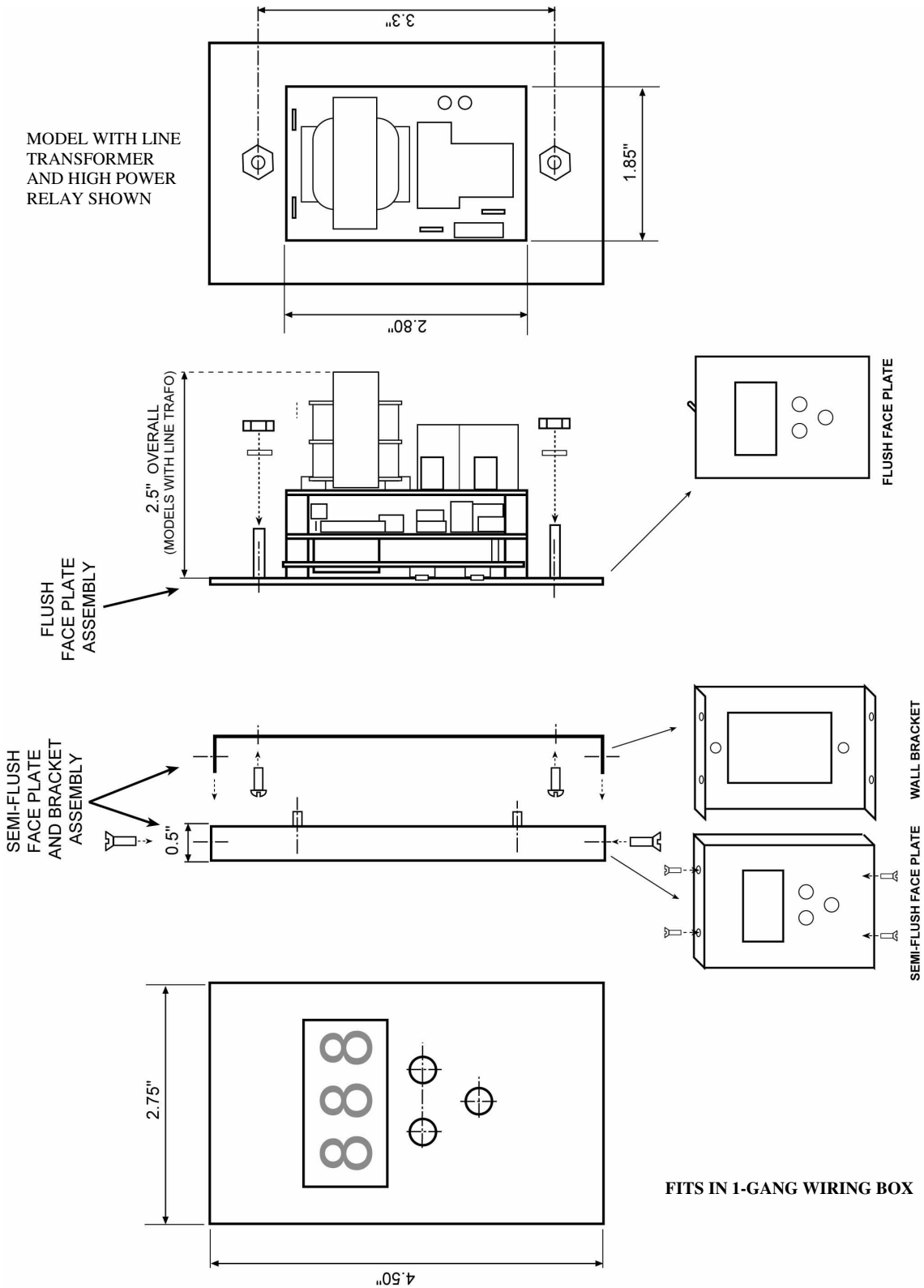
2

INSTALLATION EXAMPLE: FLUSH IN A WALL

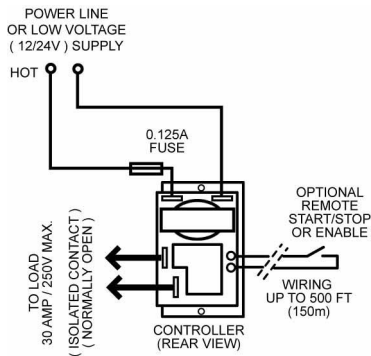INSTALLATION EXAMPLE: SEMI-FLUSH IN A WALL

PPB-1 REMOTE START/STOP PUSH-BUTTON

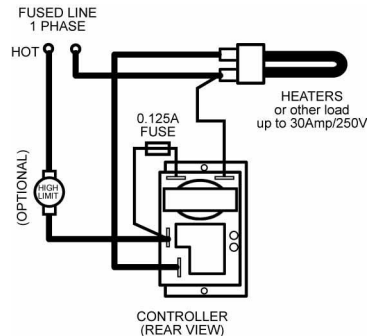INSTALLATION EXAMPLE: SEMI-FLUSH IN 1-GANG WIRING BOX

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3

MODEL WITH LINE
TRANSFORMER
AND HIGH POWER
RELAY SHOWN

3.3"

1.85"

2.80"

2.5" OVERALL
(MODELS WITH LINE TRAFO)

FLUSH FACE PLATE

FLUSH
FACE PLATE
ASSEMBLY

SEMI-FLUSH
FACE PLATE
AND BRACKET
ASSEMBLY

WALL BRACKET

SEMI-FLUSH FACE PLATE

0.5"

2.75"
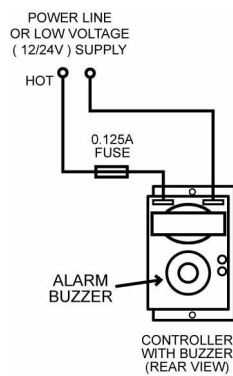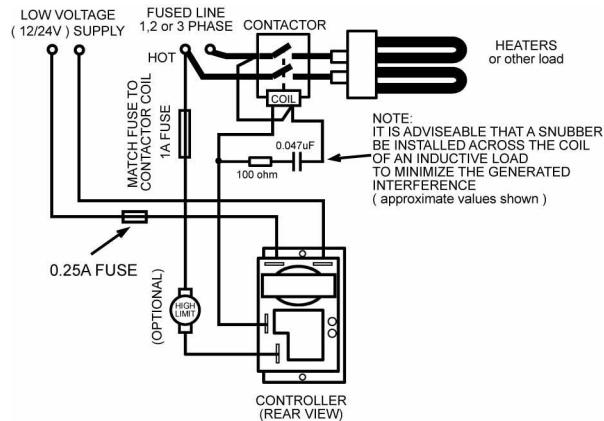
4.50"

FITS IN 1-GANG WIRING BOX

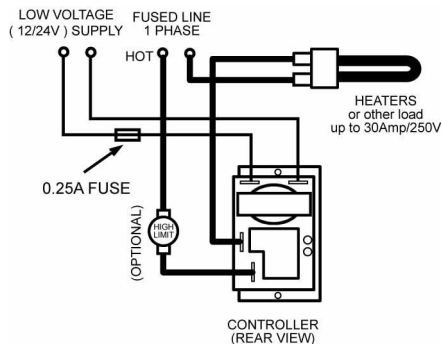**BASIC WIRING EXAMPLE FOR LOADS UP TO 30 AMPS/250V**

**SIMPLE WIRING EXAMPLE WITH POWER LINE SUPPLY
COMMON FOR THE CONTROLLER
AND THE LOAD UP TO 30 AMPS/250V**

WIRING EXAMPLE WITH ON-BOARD BUZZER

**WIRING EXAMPLE WITH EXTERNAL CONTACTOR
TO BOOST THE LOAD POWER
AND WITH SEPARATE SUPPLY FOR TIMER**

**WIRING EXAMPLE WITH POWER SUPPLY
SEPARATE FOR THE CONTROLLER
AND FOR LOAD UP TO 30 AMPS/250V**
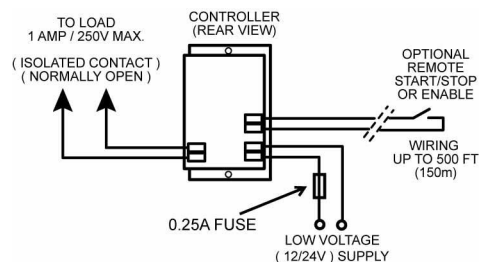
**WIRING EXAMPLE WITH LOW VOLTAGE SUPPLY
AND OPTIONAL EXTERNAL START/STOP CONTACT**

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5

OPERATING INSTRUCTIONS (example for count down model):

HOW TO START and STOP:

Press the "ON/OFF" key to Start or Stop the timer. The display will show the current time count. The "." on the right or "-" sign on the left hand side of the display may be flashing when the timer is counting.

TIMER PRESET:

Press the UP or DN key to preset the desired time period.
When the user presets the timer while it is not running, the preset value is the staring period.
When the user presets the timer while it is already running, the preset will modify the current count.
NOTE: For as song as the supply power is present, the preset value is saved in internal memory and can be recalled later on by pressing a key on the keypad. After each new power up the Preset Time Value is automatically set to the most recent preset, the maximum or to a Default value for the particular timer model.

AUTOMATIC STOP:

The timer stops automatically and resets itself to "0" when a malfunction is detected or the time expires.

IDLE OPERATION:

The display shows "OFF" to indicate that the controlled load is switched OFF and timer is not running.

CAUTION:
> **All installation and adjustments of the controller options MUST be done ONLY when ALL POWER to the load and the timer is disconnected.**

TROUBLESHOOTING:

The timer controls and the optional sensor or remote switch wiring are continually checked for proper operation.
If a malfunction is detected, the timer will automatically switch OFF the load and deactivate itself. At the same time display will show "Err" and/or a scrolling message with error diagnosis.
The timer can not be reactivated until all causes of the malfunction are fixed.

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6

Following is an example of specifications for a particular model. Note, that all timer features and ranges, electrical as well as mechanical specifications, can be modified per customer requirements.

Example model: **SDT-4PB-I-HP-120-RM1M60**

SPECIFICATIONS:	VALUE	NOTES, COMMENTS
Electrical:		
Supply Voltage:	105-130Vac, 60 Hz	208-250Vac, 50/60Hz, 12/24V AC/DC
Supply Current (controller):	25 mA RMS max.	Can be different for different voltages, relays and display brightness or color
Max. Switched Load:	30 Amp, 250Vac max.	Can be different for other relay models
Oper. Ambient temperature:	-4 to +158F (-20 to +70C) (standard)	-20 to +90C extended with high temp LEDs
Switching Reliability:	10,000,000 electrical 10,000,000 mechanical	For AC load
Timer Count Mode:	Count Down	Other modes available
Timer Preset Range:	1 to 60 minutes	Custom ranges available
Timer Preset Resolution:	1 minute / step	Custom values available
Timer Display resolution:	1 minute	Custom resolutions on request
LED Display:	3 digits, 0.56" high	
Display color:	Super RED, GREEN or BLUE	Different colors upon request
Mechanical:		
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	

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7