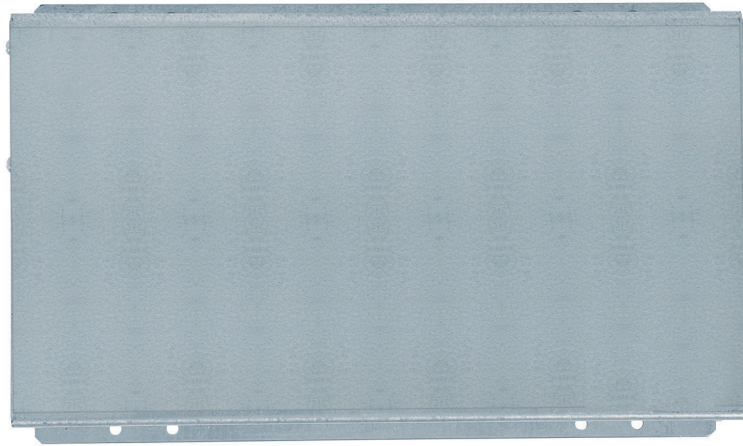


Installation Manual V3

Sapling Converter Box



Sapling Converter Box

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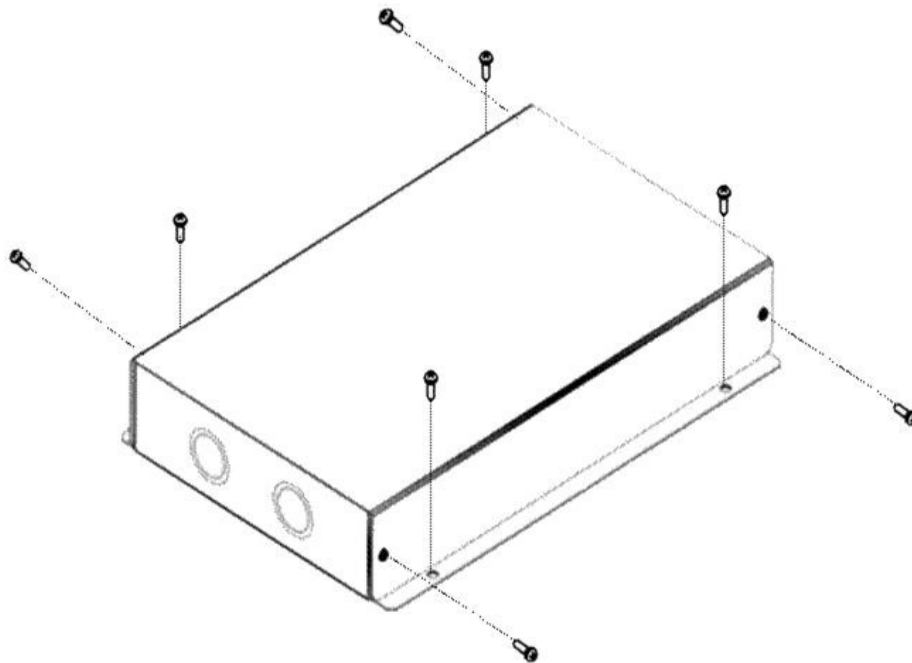
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Installation Instructions

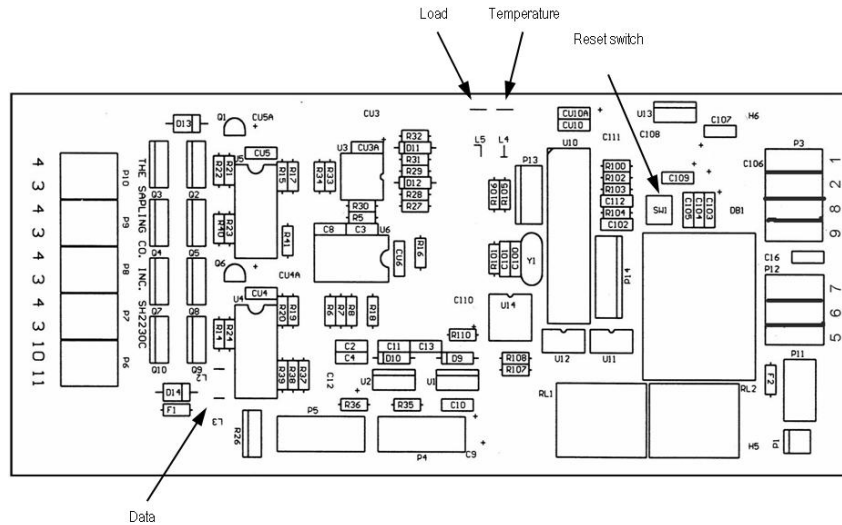
Installation the Converter Box



1. Locate where the Converter Box is to be mounted.
2. Mount the Converter Box using 4 screws to secure it to the surface.

Operating and Wiring Instructions

Board Layout



Operating Instructions

1. Connect external power to terminal blocks 5 and 7. Pin 6 is ground.
2. Connect RS485 input communication to terminal blocks to pins 1 and 2.
3. Connect output for 2-wire system to terminal blocks 3 & 4 (terminal blocks 10 & 11 are not used). Each pair will drive a certain number of clocks totaling up to 5.5 amps.
4. When the box is connected to power (terminal blocks 5,6 and 7) and communication (terminal blocks 1 and 2) LEDs L2 and L3 will flicker. LED L2 will light up first and will remain lit longer. It will dim when L3 becomes lit. This informs the technician that the device is receiving a communication signal.
5. The converter box is equipped with overload protection. In the event the device has reached maximum current output or there is a short circuit in the output, LED L5 (marked with an 'L' on the PCB) will light up. To reset, push the small black button located next to the transformer and 3 capacitors.
6. The converter box also contains overheating protection. When the device reaches a certain temperature (approximately 32° C) a fan will engage to reduce the temperature. If the converter box reaches 50° C, the entire unit will shut down. If the unit shuts down, LED L4 (marked with a 'T') will light up. To reset, push the small black button located next to the transformer and 3 capacitors.

Support

Frequently Asked Questions

Which systems do the Converter Box work with?

The Converter Box only works on 2-wire digital communication systems.

What voltage clocks can I use with the Converter Box?

The Converter Box only works on 24 volt clocks.

Can I use analog and digital clocks in conjunction with the Converter Box?

Yes, analog and digital clocks can be used with the Converter Box. Both the analog and the digital clocks must be 24 volts, and can accept the 2-wire digital communication system. Please refer to the clock's installation instructions for specific wiring diagrams.

What will happen if the polarity on the RS485 is reversed?

The clocks will power up, but not correct. Make sure the wires are on the correct polarity and/or refer to the wiring diagrams in the clock's installation manual.

What does the Load LED do?

The Load LED warns the user if the Converter Box is reaching 80% or higher of its maximum threshold of 5.5 amps. If the Load LED turns solid, it will shut the Converter Box off, and will attempt to reset in two minutes.

What does the Temperature LED do?

The Temperature LED warns the user if the Converter Box is reaching 80% or higher of its maximum threshold for temperature. If the Temperature LED turns solid, it will shut down the Converter Box, and will stay off until the user presses the reset button on the board.

Support

Troubleshooting

What happens if L2 and L3 are not flickering, or if only 1 LED is lit?

Check the RS485 input to the converter box.

What happens if L3 lights longer than L2?

The polarity of the RS485 input is reversed. Switch wires 1 and 2.

What do I do if the L4 is lit?

Push the reset button to start the system. L4 indicates if the system is overheating. If problem continues, please contact manufacturer.

What should I do if L5 is flashing?

This indicates that the converter box has reached 80% of its current capacity. It is possible for the converter box to shut down at this point should it be subjected to a spike in the line. Should a shut-down occur, the converter box will attempt to power up automatically. If after attempting to restart twice without success, the unit will remain off until the manual reset button is pushed. This is to inform technicians of a problem somewhere in the system and is not an abnormal occurrence.

What should I do if L5 is lit?

Remove load from the converter box, turn the box on and push the reset button. Then connect one leg of wiring at a time to determine the source of the short circuit.

NOTE: Clock system wiring legs can be attached to as many of the "3" and "4" terminal blocks as you wish, to a total of 5.5 amps.

Compliances

FCC Statement: Information to the user (for U.S. only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

IC Statement (for Canada only)

This Class B digital apparatus complies with Canadian ICES-003.

CET appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CE Declaration of Conformity

We, The Sapling Company certify and declare under our sole responsibility that the SMA 3000 conforms with the essential requirements of the EMC Directive 2004/108.EC and LVD 2006/95/EC, based on the following standards applied:

EN 55022: 2006

EN 61000-3-2: 2006

EN 61000-3-3: 1995 /A1: 2001 /A2:2005

EN 55024 : 1998 /A1:2001, A2:2003

EN 60950-1:2006 - Safety Part 1