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FREQUENTLY ASKED QUESTIONS

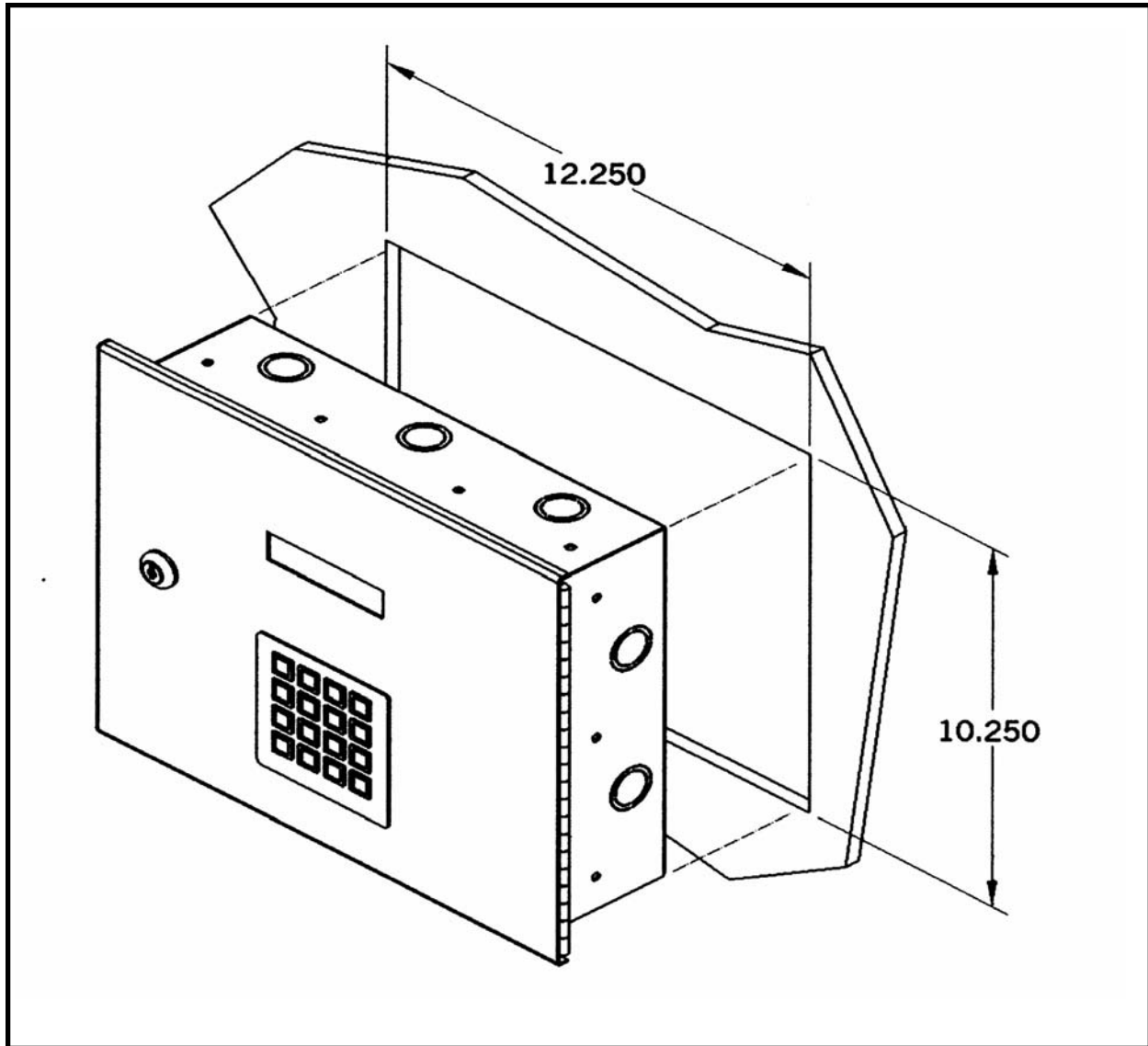
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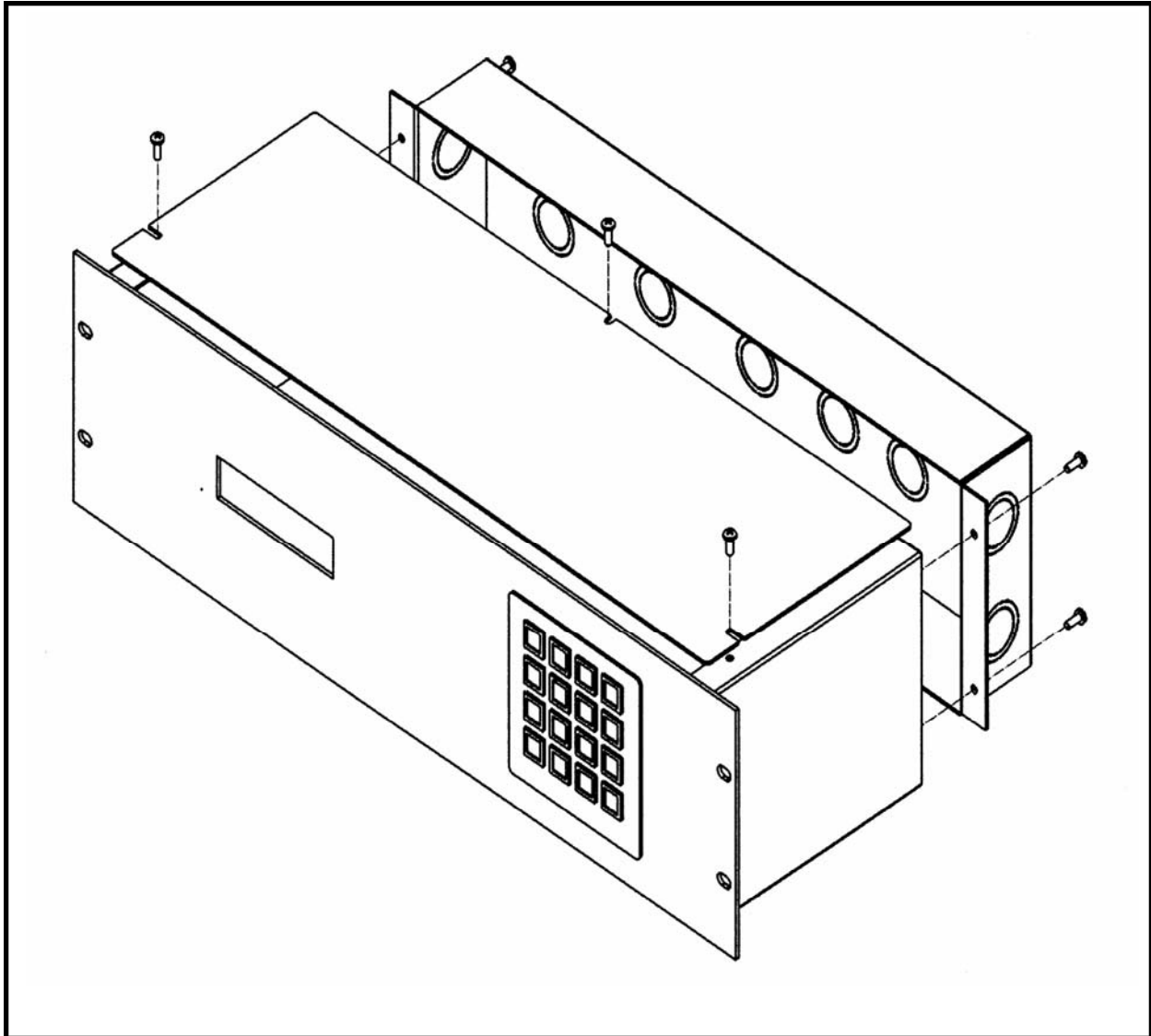


Surface Mounting Diagram



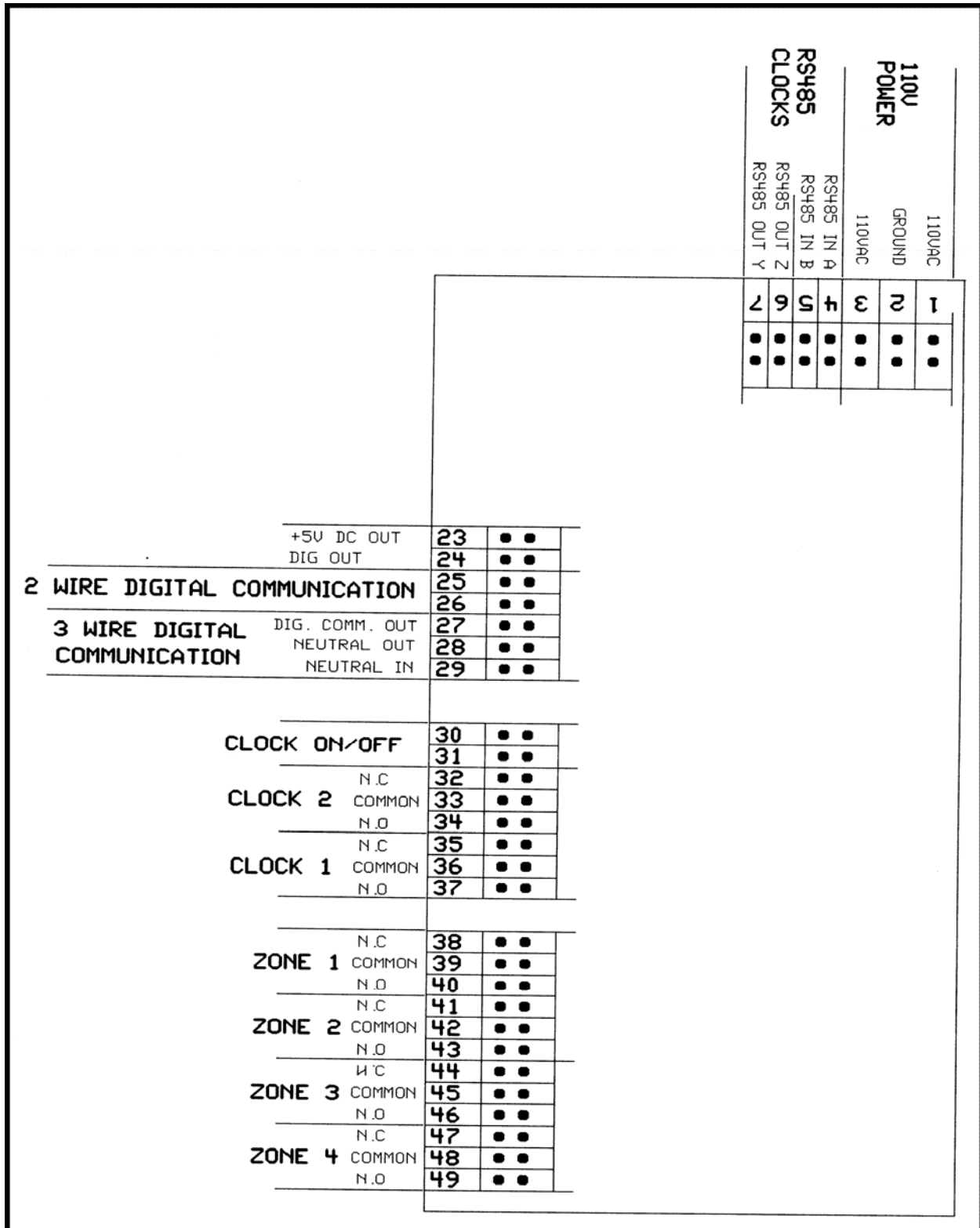


Rack Mounting Diagram



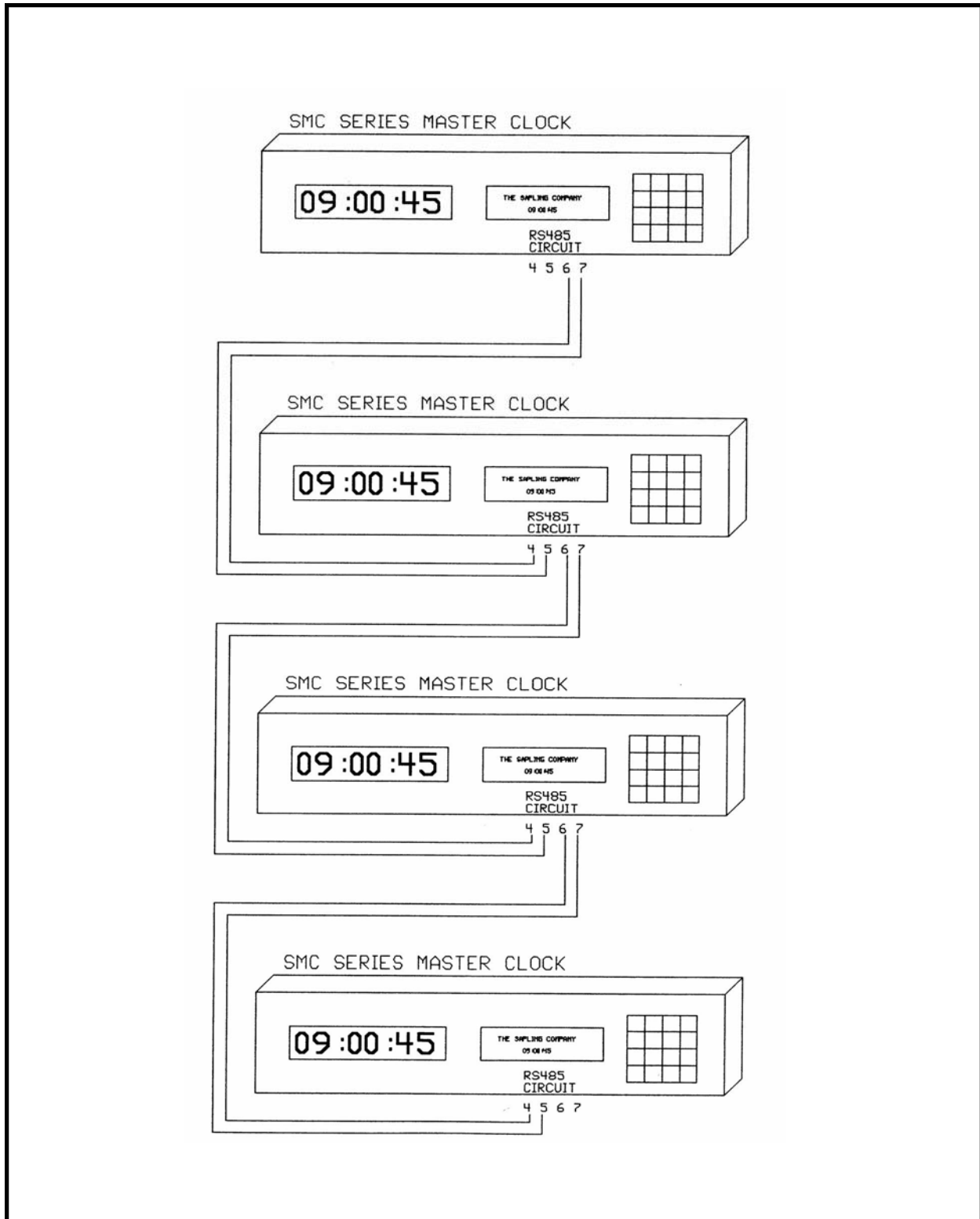


Board Layout





Interfacing Between Master Clocks





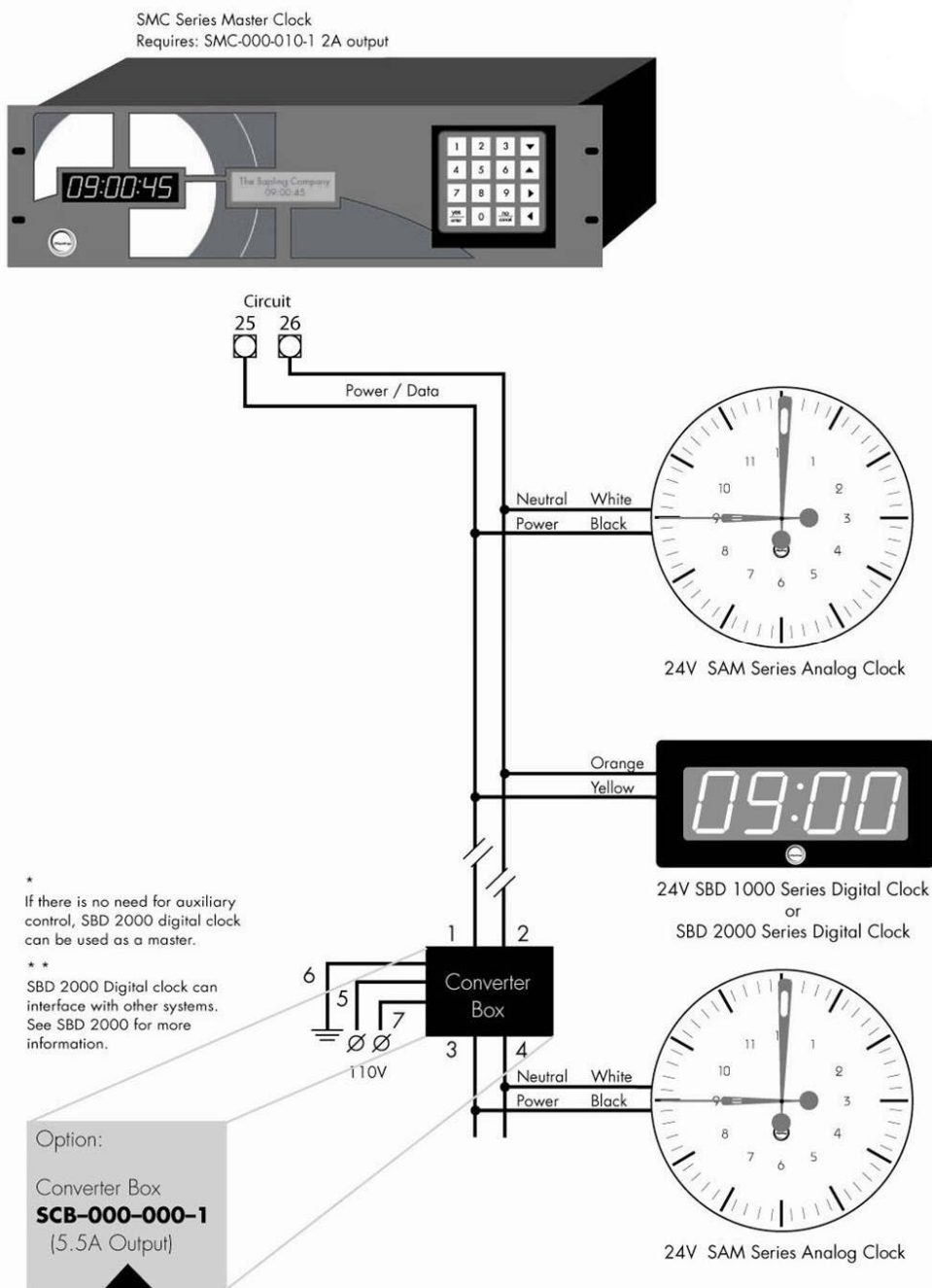
Synchronous Protocol Information

<u>Protocol Type</u>	<u>Correction Code</u>	<u>Hourly Correction Time</u>	<u>Hourly Correction Duration</u>	<u>Daily Correction Time</u>	<u>Daily Correction Duration</u>
59 minute correction Simplex 2310-92XX 57 and 77 series IBM 57, 62, 77, 82 and 87 series Cincinnati D10 and D12 Latham SS12 types Edwards 01 Dukane 24SS series	006	xx:57:54 Will correct the minutes and seconds.	8 seconds	05:57:54 17:57:53 Will correct hours, minutes, and seconds.	14 seconds
Dukane 24030,24023,24050, 24060 and 24010 types National Time & Rauland Rauland Analog 2460 series National 010-NNE-SRAX, 010-NNE-SRAXLV, 023-NNE-SRAX, 023-NNE-SRAXLV, 030-NNE-SRAX, 030-NNE-SRAXLV, 060-12E-SRAX, 060-12E-SRAXLV	001 or 002	xx:00:00 Will correct the minutes and seconds.	25 seconds	06:00:00 18:00:00 Will correct hours, minutes, and seconds.	001 = 25 seconds on, 35 seconds off every minute for 24 minutes. 002 = 24 minute closure from 6:00:25 to 6:24:25 AM & PM
Stromberg E3109 and WS310	003	xx:56:05 Will correct the minutes and seconds.	10 seconds	11:56:00 23:56:00 Will correct hours, minutes, and seconds.	45 seconds
National, 010-NNE-SR, 010-NNE-SRLV 023-NNE-SR, 023-NNE-SRLV 030-NNE-SR 030-NNE-SRLV 060-12E-SR 060-12E-SRLV	020	xx:00:00	25 seconds	N/A	N/A
Dukane 24BF209, 24BF212 707-8 and 707-9 types	005	xx:57:03 Will correct the minutes and seconds. xx:58:05	57 seconds	5:59:03 17:59:03 Will correct for hours, minutes, and seconds.	57 seconds on, 63 seconds off 11 times from 5:59:03 to 6:20:00
58 minute correction Honeywell ST402, 403, 404, 410, 411, 412, 413, 802, 803, 804, 810, 811, 812 & 813 Faraday 1310, 1311, 1320, & 1321 Cincinnati D8 Standard/Faraday 2310 & 2331	007	xx:58:05 Will correct the minutes and seconds.	55 seconds	5:05:00 17:05:00	65 seconds on, 25 seconds off 12 times from 5:05:00 to 5:22:35

SMC 2000 Series Master Clock Installation Manual (v2)



SMC SERIES MASTER CLOCK 2 WIRE DIGITAL COMMUNICATION

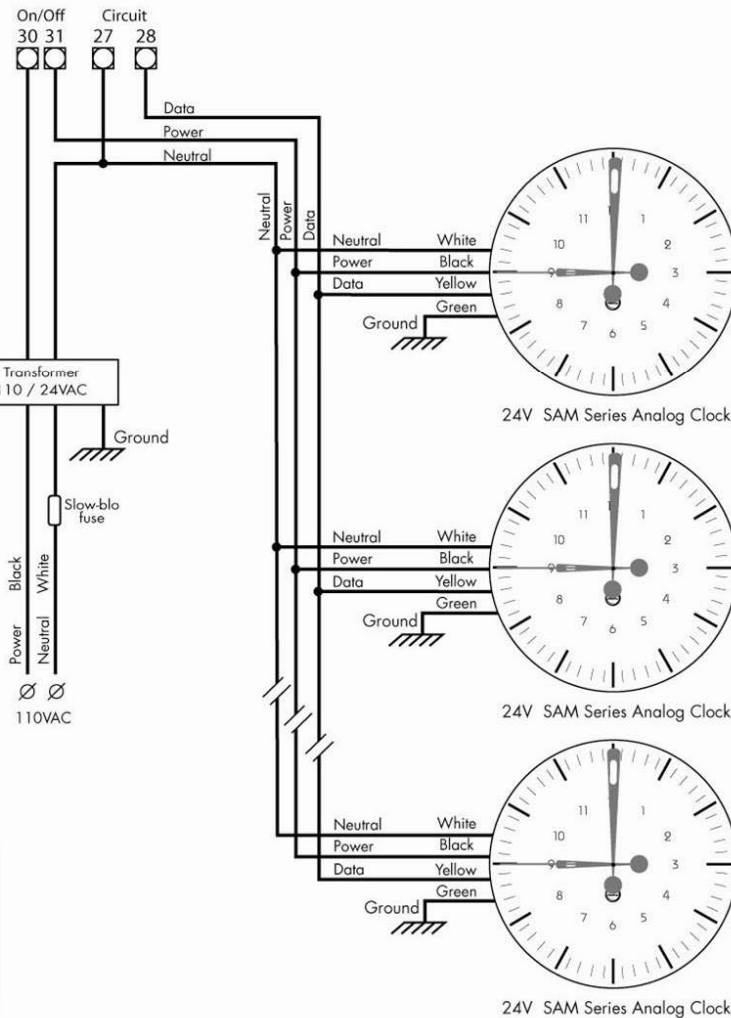
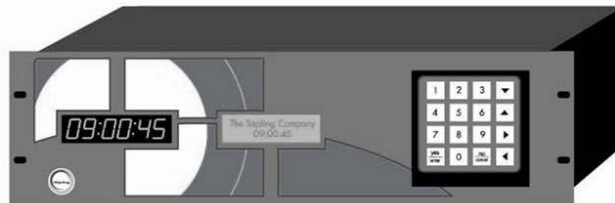


SMC 2000 Series Master Clock Installation Manual (v2)



SMC SERIES MASTER CLOCK 3 WIRE DIGITAL COMMUNICATION 24 VOLT

SMC Series Master Clock
Requires: SMC-000-010-1 power supply



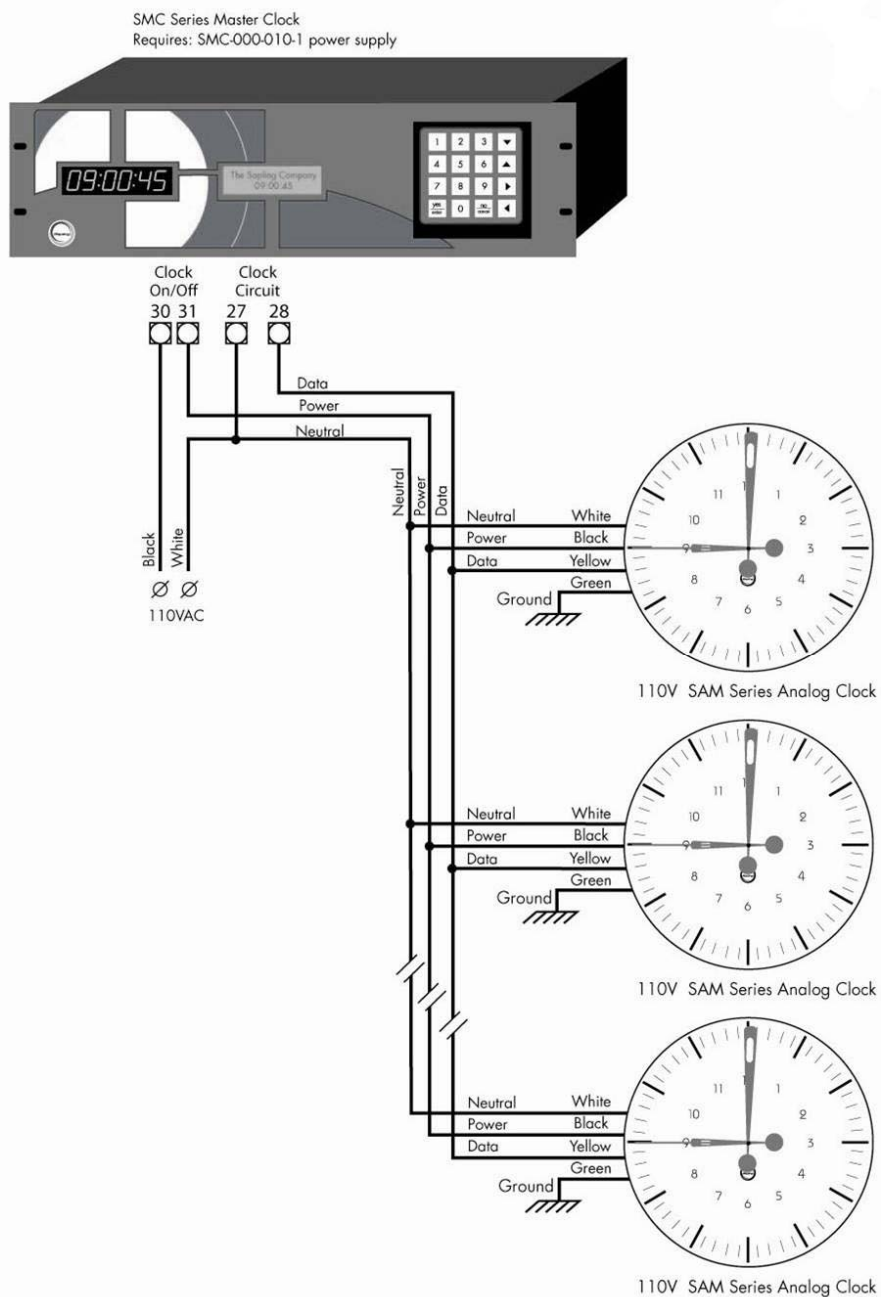
**
If a transformer is needed
for a 24 volt system,
please select from the
following:

Part Number:
35-M015 (6.2A)
35-M020 (10.4A)
35-M025 (20.8A)
35-M030 (31.2A)

SMC 2000 Series Master Clock Installation Manual (v2)



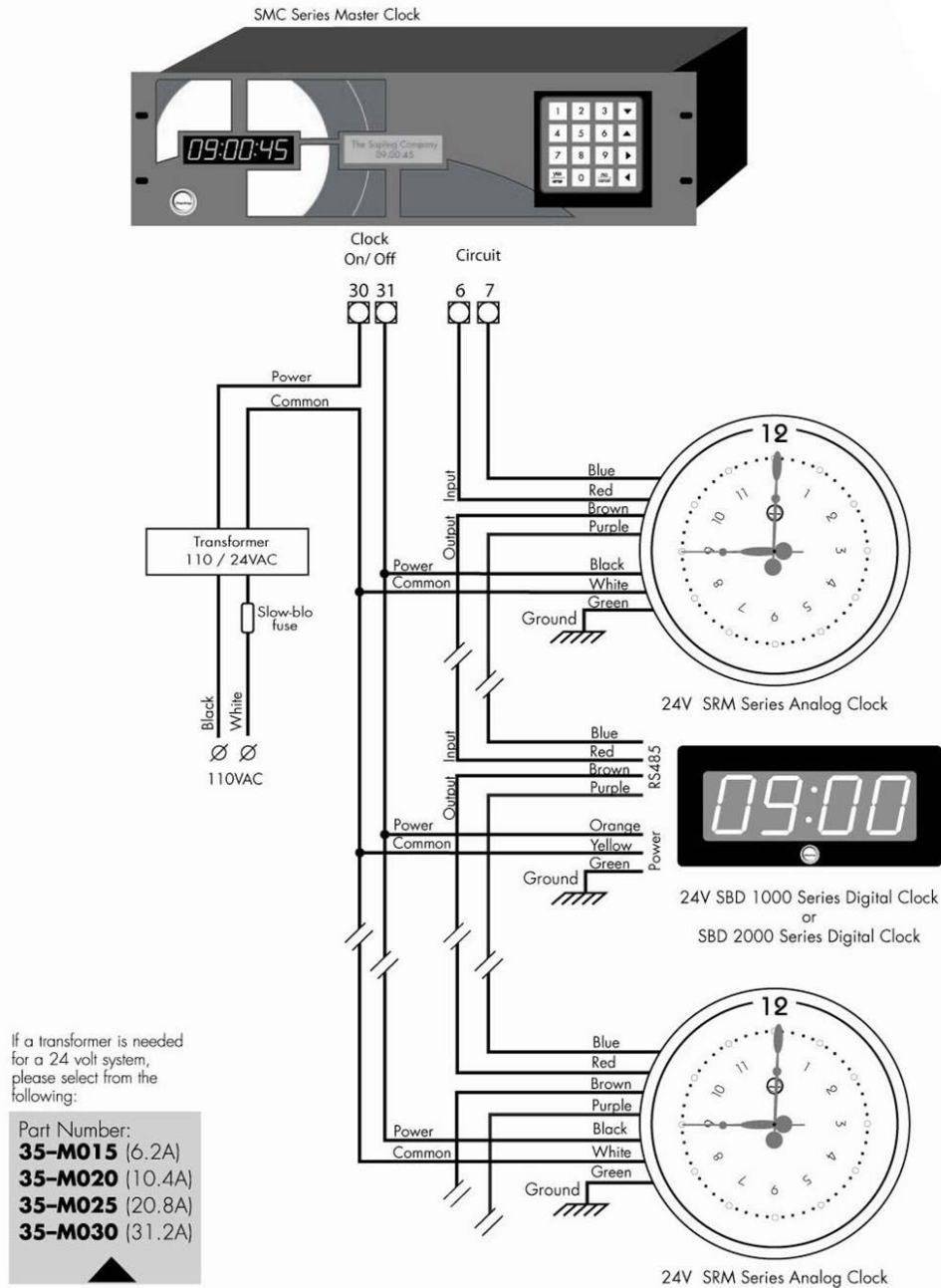
SMC SERIES MASTER CLOCK 3 WIRE DIGITAL COMMUNICATION 110 VOLT



SMC 2000 Series Master Clock Installation Manual (v2)



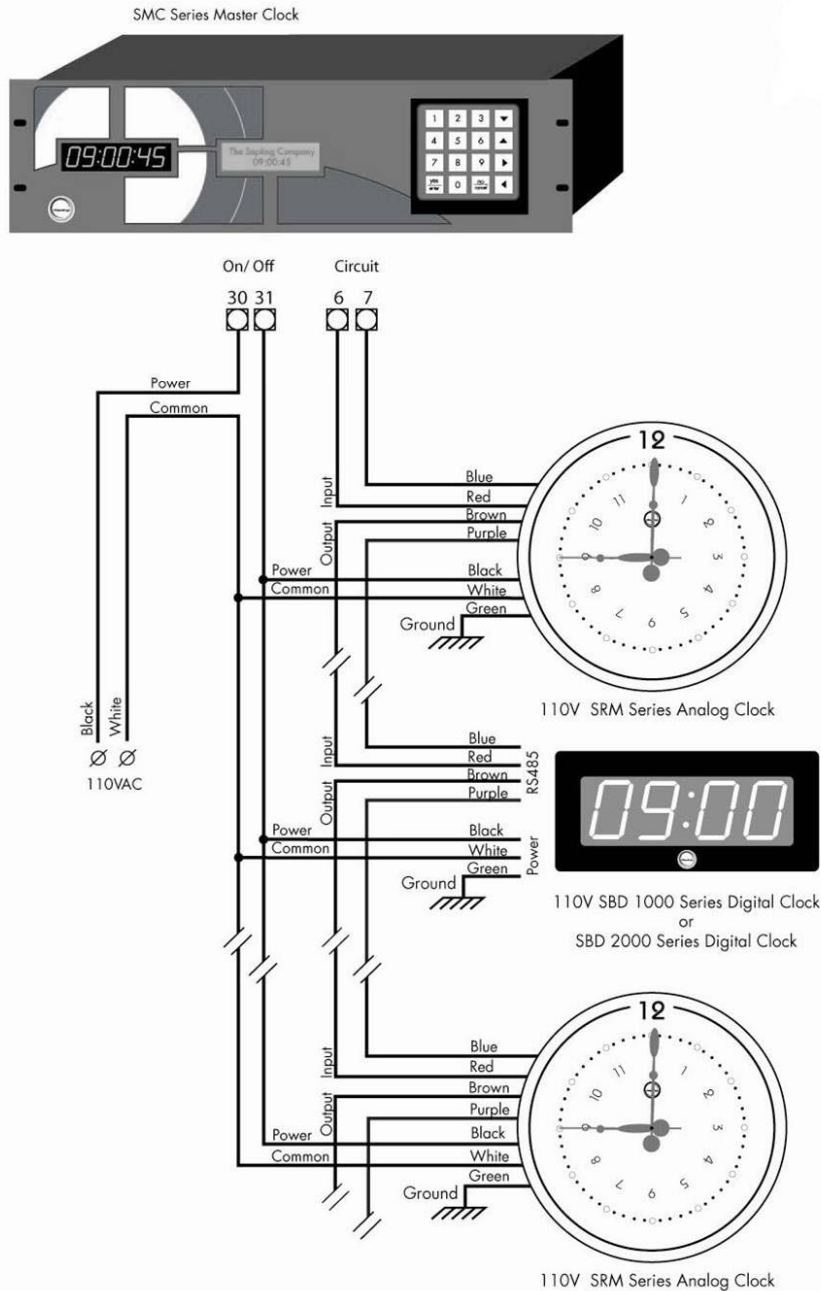
SMC SERIES MASTER CLOCK RS485 24 VOLT



SMC 2000 Series Master Clock Installation Manual (v2)



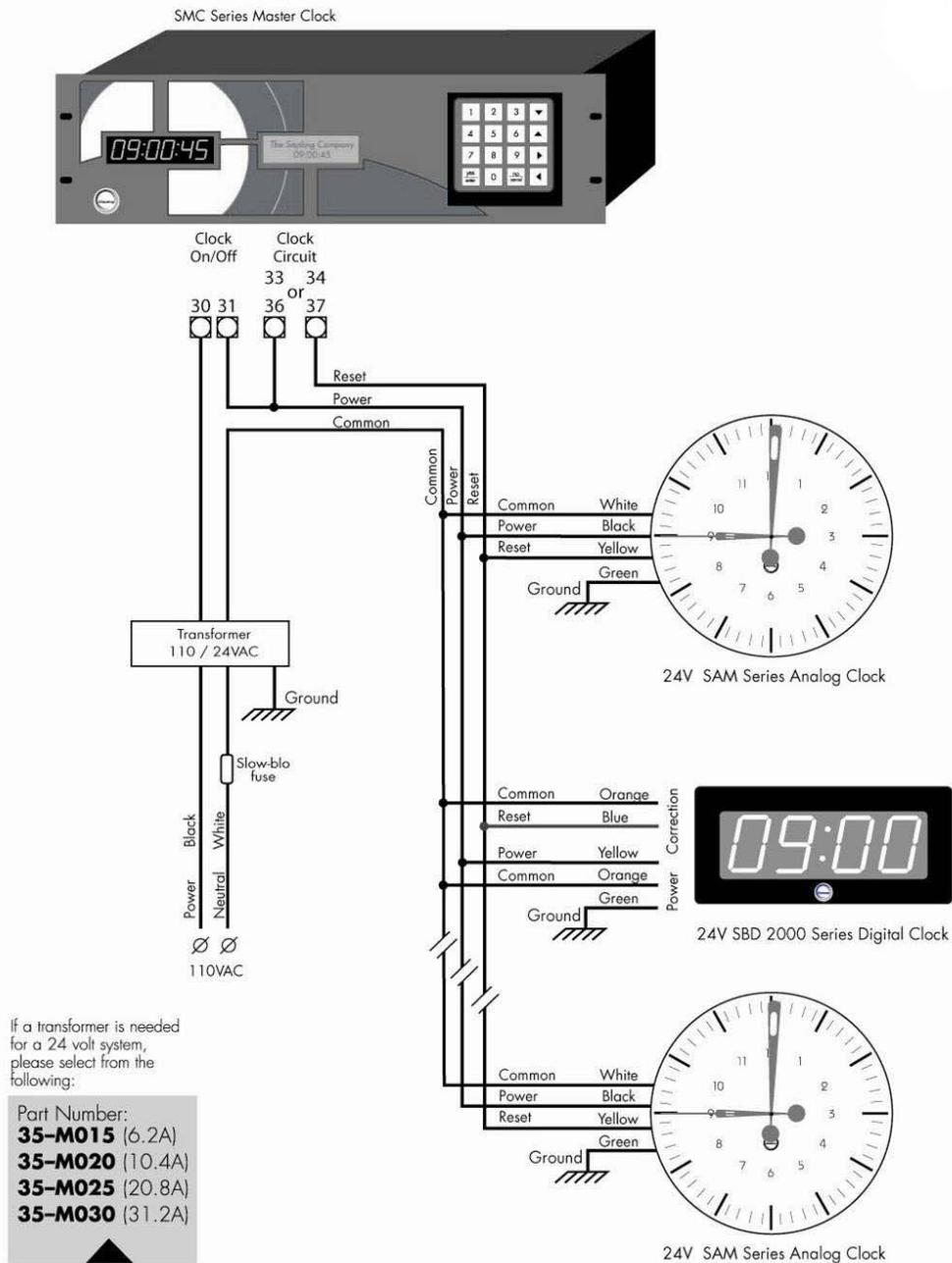
SMC SERIES MASTER CLOCK RS485 110 VOLT



SMC 2000 Series Master Clock Installation Manual (v2)



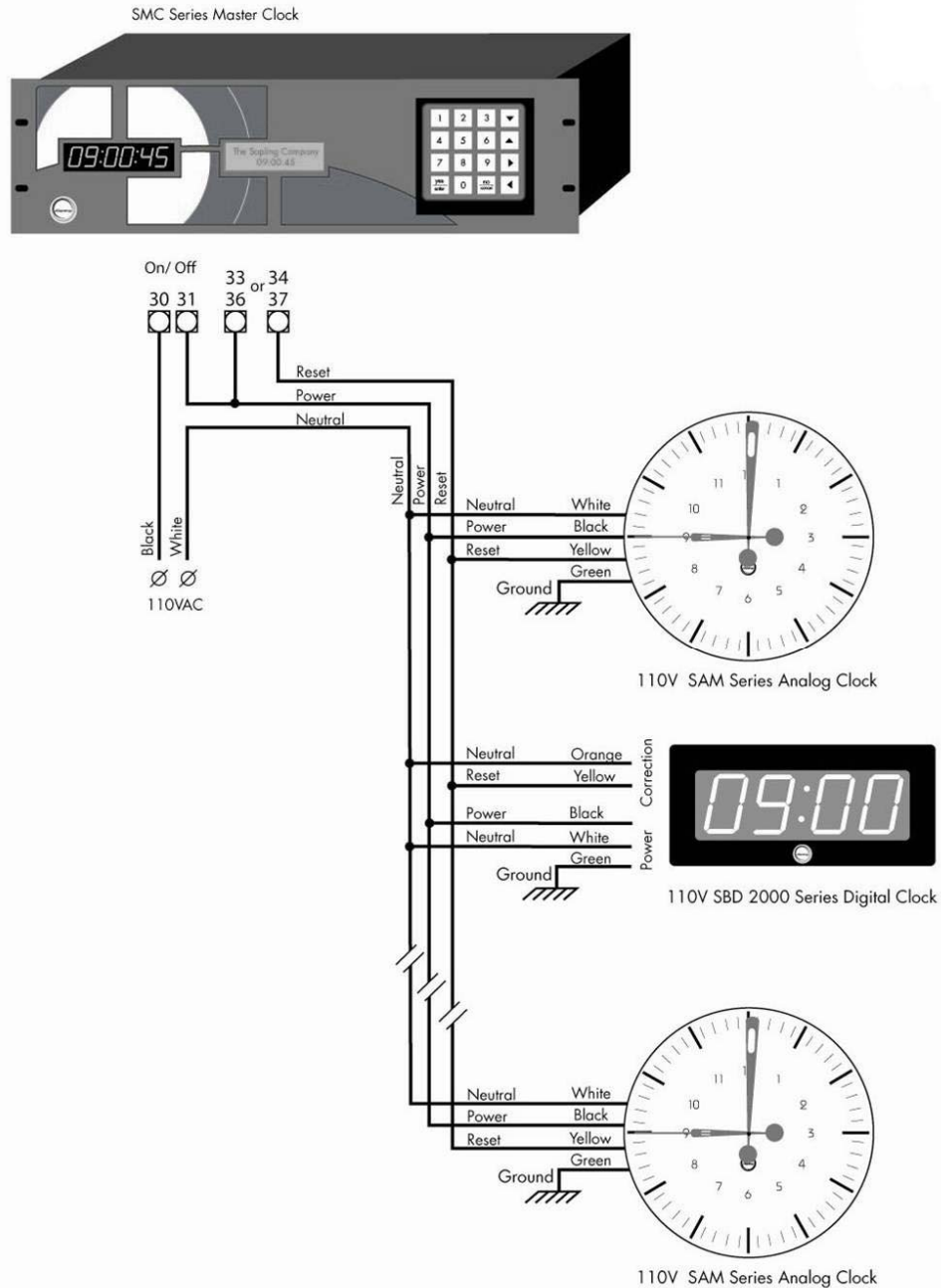
SMC SERIES MASTER CLOCK 3 WIRE SYNCHRONOUS 24 VOLT



SMC 2000 Series Master Clock Installation Manual (v2)



SMC SERIES MASTER CLOCK 3 WIRE SYNCHRONOUS 110 VOLT





Frequently Asked Questions

What systems can I run off of the SMC 2000 Series master clock?

The SMC 2000 Series master clock can run 59 minute correction, 58 minute correction, National Time and Rauland, 2 and 3 wire digital communication (with optional auxiliary power supply installed), and Sapling RS485 systems.

How many events can I schedule into the master clock?

There can be up to 800 events scheduled in the master clock.

I have to have a bell system in the school. How many relays are available in the SMC 2000 Series master clock?

There are four (4) relays standard with the master clock. The SMC 2000 master clock can utilize up to twelve (12) relays total.

Does the SMC 2000 have built-in bells?

No. The SMC 2000 does not contain any bells. It provides the relay closures for bell systems. Bells or tone generators must be purchased through a third party.

What voltage can I use to power the SMC 2000 master clock?

The SMC 2000 master clock can be powered using 110 VAC/60 Hz or 220 VAC/50 Hz.

Will the master clock lose all of my settings if power is removed?

No, the SMC 2000 has a non-volatile EEPROM that ensures that the information stored will not be lost.

Is there anyway I can test to see if a relay is working?

Yes, through BIT testing, every aspect of the master clock can be tested to make sure everything is running optimally. For more information on BIT testing, please refer to the SMC 2000 programming manual.

How long does the battery backup last?

The battery lasts for ten (10) years under normal operation.



Troubleshooting

What should I do if the master clock is not powering up?

Measure the voltage between pins one (1) & three (3). The voltmeter should read 85 - 135 VAC between the hot and the neutral.

My synchronous clock system is not correcting. What should I do?

Make sure the right correction code is inputted into the master clock circuit. Please refer to page 6 for details.

My 2 wire system doesn't seem to be working. How can I test the signal of the 2 wire digital communication circuit?

First, make sure the auxiliary power supply was installed (part number SMC-000-010-1). If the power supply is correctly installed, then put the voltmeter on DC voltage. Measure between pins 25 and 26 and verify that you have a pulsating 24 volts. If you do not have voltage there, contact Sapling technical support.

I'm interfacing the master clock with the GPS receiver. The master clock doesn't seem to correct. What should I do?

Make sure the polarity for the RS485 is correct coming from the GPS. If the polarity is reversed, the master clock will not correct.

The relay isn't closing for my bell system. How do I know if it's working?

The SMC 2000 has a self-testing feature called BIT testing. This will test all aspects of the master clock. Enter BIT testing and test the relay. For more information on how to enter BIT testing, please refer to the SMC 2000 programming manual.