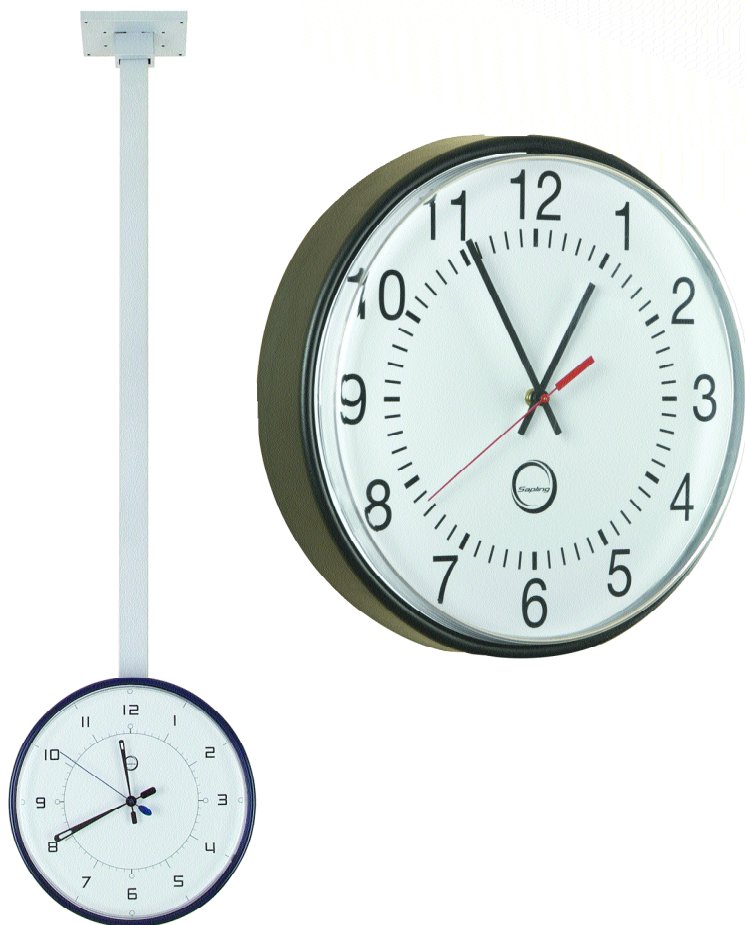


SRM Series RS485 Clock

Description

Sapling's revolutionary new SRM Series analog clocks are an excellent, cost-effective way to have a stable, reliable system. The new RS485 clocks use optocoupler technology which isolates the communication preventing damaging lightning strikes or power surges. The clocks contain built-in test procedures for last received communication time as well as a comprehensive analysis of the clock. SRM clocks can also run self-diagnostic routines and relay the results to the user. By having these diagnostics, the clocks can be locally controlled from a remote master clock location. The clock movement has LEDs which shows the user if and when the communication is received by the clock and transmitted to the next clock, making the system easier to maintain. These features provide significant flexibility and responsiveness. SRM Series clocks allow the user to interface with our previous RS485 systems. The SRM Series incorporates our RS485 protocol, which transmits and receives a stream of data that constantly checks and corrects every clock in the system. This protocol prevents the clocks from deviating from each other, while providing five (5) minute (max) system correction. Sapling SRM Series analog clocks are compact, energy efficient and reliable. The clocks are available in 12" and 16" round cases. The shallow, low profile metal cases eliminate the need for custom back boxes. By using electronic components, the Sapling SRM Series analog clocks have a much less chance of mechanical failure.



Ordering Info: Page 13



Highlights

- ▶ Uses local power plus two (2) wires for communication
- ▶ Comparable to the SAR Series
- ▶ Microprocessor based movement
- ▶ Automatic frequency detection
- ▶ Diagnostic LEDs for ease of maintenance
- ▶ Data LEDs for verifying the transmission and receipt of data
- ▶ Unlimited clocks can be run on the same communication line when daisy chained
- ▶ Analog and digital clocks can be run on the same communication line
- ▶ Does not require an expensive master; it can be run off the SBD 2000 Digital Clock as well as a SMC 2000 or 3000, SSM Master Clock or GPS
- ▶ Built-in self-test function
- ▶ Remote system diagnostics
- ▶ Quick correction for time change (max. five (5) minutes)
- ▶ Clocks will not deviate from each other
- ▶ Ideal for renovation projects using existing wiring, or for new installations
- ▶ Hour, minute and second hands
- ▶ Energy efficient:
 - 20 mA@ 24 VAC
 - 15 mA@ 110 VAC
 - 10 mA correction
- ▶ Wide dynamic range for input voltage
 - 7 VAC—28 VAC (24 VAC model)
 - 85 VAC—135 VAC (110 VAC model)
- ▶ Low profile—one (1) model for flush and surface mount
- ▶ Communication line can use up to 22 gauge wire
- ▶ No need for custom back box
- ▶ Plug in Molex connectors
- ▶ Smooth surface metal case and polycarbonate crystal
- ▶ Available in 110 VAC and 24 VAC
- ▶ UL, cUL listed and FCC approved
- ▶ Made in U.S.A.
- ▶ Patents pending

Architectural & Engineering Specifications

The secondary clock shall be Sapling SRM Series clock with RS485 protocol implementation. The clock shall have automatic frequency detection for time base. The clock will have self-diagnostic capabilities, relaying to the user information such as when the clock last received communication signals, and a comprehensive analysis of the clock. The SRM will have the ability for remote diagnosis from the master clock location. It shall have a maximum correction time of five (5) minutes. It will be designed to be used in a RS485 system with Sapling SBD 2000 Series Master Clock or Sapling 2000 or 3000 Series Master Clock systems, the GPS, or the SSM Master Clock which can regulate it by Sapling RS485 communication protocol. Upon receipt of the RS485 signal, the clock shall immediately self-correct. The secondary clock is to have a microprocessor based movement. The clock shall have a low-profile, semi-flush smooth surface metal case. The crystal is to be made of shatterproof, side molded polycarbonate material. Glass and visible molding marks are unacceptable. The clock shall have black hour and minute hands as well as a red second hand. The clock shall have UL, cUL and FCC compliance.

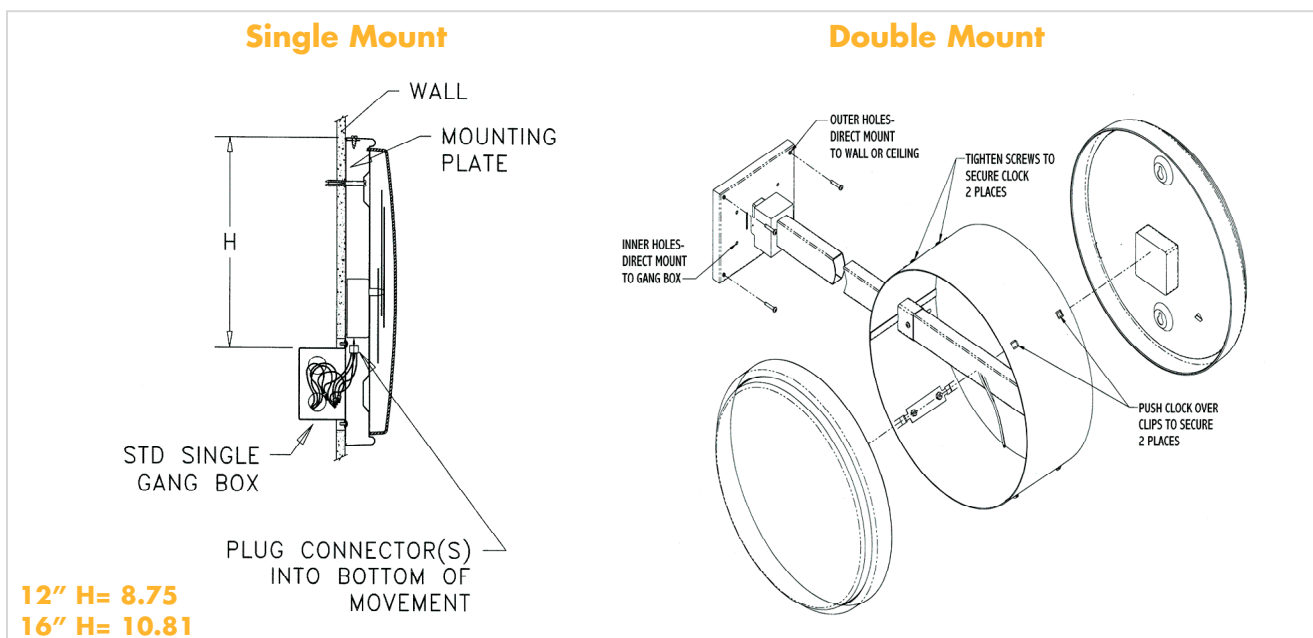


Accessories: Page 77

Specifications

Time Base:	50/60 Hz (automatic frequency detection)
Voltage Input:	85–135 VAC / 60 Hz 7–28 VAC / 60 Hz
Average Current Consumption:	20 mA @ 110 VAC 15 mA @ 24 VAC
Correction Current Consumption:	10 mA
Display:	12 or 24 hour format
Color:	Standard black or white (custom colors available)
Clock Size:	12.81" diameter, 1.2" depth 16.81" diameter, 1.6" depth
Dial:	Durable polystyrene material
Case:	Shallow profile, smooth surface metal case or smooth surface ABS case
Crystal:	Shatterproof, side molded polycarbonate crystal
Temperature Range	
Operating:	0°C–45°C
Shelf:	-15°C–75°C
Movement Dimensions: (L x W x D)	2.93" x 2.84" x .937"
Mounting Bracket Dimensions: (L x W x D)	12"–12.56" x 3" x .04" 16"–16.37" x 3" x .04"
Shipping Box Dimensions: (L x W x D)	12"–15" x 16.25" x 2.5" 16"–18" x 19.25" x 3.5"
Shipping Weight:	12"–4 lbs. 16"–6 lbs.
Power Kit Includes:	1–5 pin power harness (18 AWG) 1–4 pin RS485 harness (22 AWG) 1–ground wire (18 AWG) 1–10–12 blue plastic anchor 1–sheet metal screw 10 x 1.5 2–machine screws 6–32 x 1/2 2–4mm thread, 10mm length screw
Compliance:	UL, cUL listed and FCC approved

Mechanical Drawing



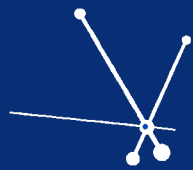
Hands Options

STANDARD CHOICE

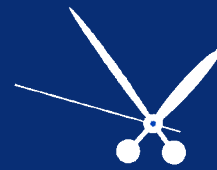


Style 1

CUSTOM CHOICES



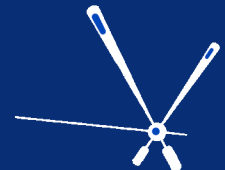
Style A



Style B



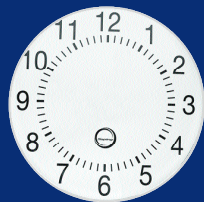
Style C



Style D

Dial Options

STANDARD CHOICE

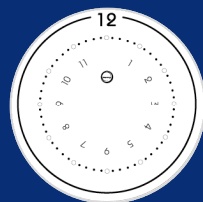


12 Hour
Style 1



24 Hour
Style 2

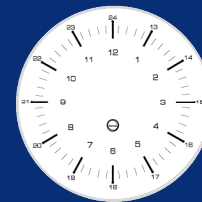
CUSTOM CHOICES



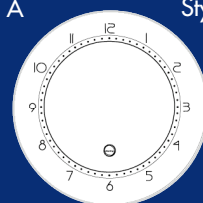
Style A



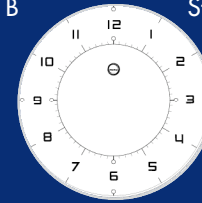
Style B



Style C



Style D



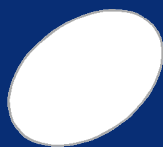
Style E

Color Options

STANDARD CHOICE



Black
Style 1

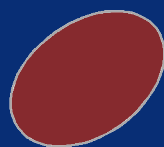


White
Style 2

CUSTOM CHOICES



#645
Style A



#188
Style B



#281
Style C



#519
Style D



#166
Style E

Ordering Information

Analogue Clock

Double Mount Bracket

SRM-ACS-ZZR-VHD

A=Case 1=Metal 2=Plastic	C=Color 1=Black 2=White Other=(see chart)	ZZ=Clock Size 12=12" 16=16"	V=Voltage 1=110 V 50/60 Hz 4=24 V 50/60 Hz	H=Hands See chart Style 1 Style A-D	D=Dial See chart Style 1 or 2 Style A-E
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SAB-1CD-ZZR-OL

C=Color 1=Black 2=White Other=(see chart)	ZZ=Clock Size 12=12" 16=16"	L=Pole Length Standard: 04=4" Optional: 12=12" 24=24" 36=36" 48=48"
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Options:

Additional Power Kits: 12": A-PK-RS-12-2A or 16": A-PK-RS-16-2A
 Additional Mounting Brackets: 12": M-MB-12-4 or 16": M-MB-16-2
 Surface Mount Ring: 12": A-MOUNT-12S-1 or 16": A-MOUNT-16S-1
 (See page 79)
 Universal Mounting Bracket: M-UMB-12-1 (See page 79)

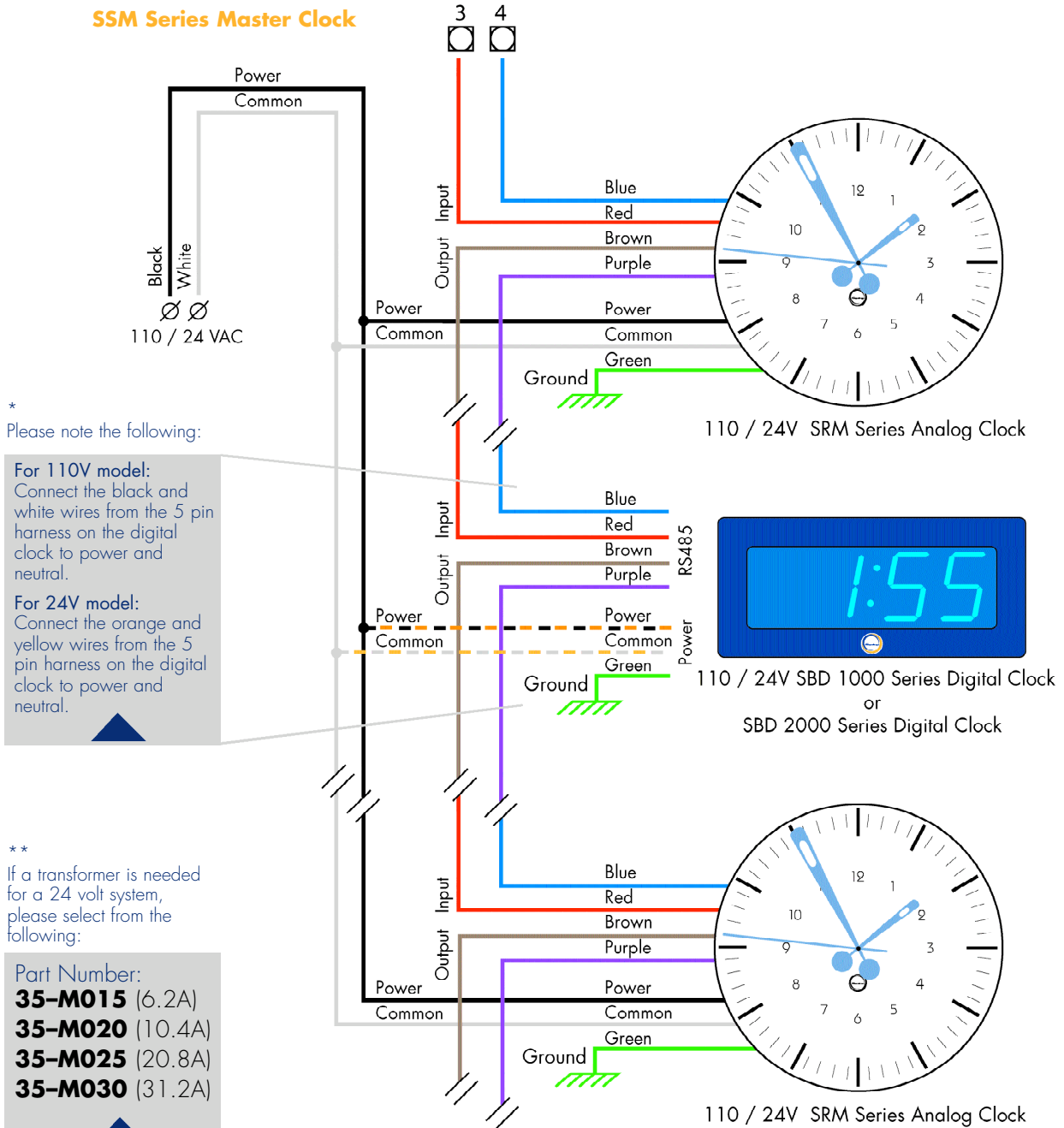
Example:

SAB-1BD-12R-024: 12" Double Mount Bracket, Black, 24" Length
 SAB-1BD-16R-036: 16" Double Mount Bracket, Black, 36" Length

RS485 Communication



SSM Series Master Clock



* Please note the following:

For 110V model:
Connect the black and white wires from the 5 pin harness on the digital clock to power and neutral.

For 24V model:
Connect the orange and yellow wires from the 5 pin harness on the digital clock to power and neutral.

** 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)