■ SAH Series Large Clock
Description

The SAH Series large clock is a perfect way to display the time clearly from a distance due to the large and vibrantly colored dial. The SAH Series comes in sizes of either 24″, 36″ or 48″. The clock has a water resistant option which makes it ideal for outdoor use. The SAH Series also has a backlight option for night–time viewing. SAH clocks are fully plug and play; there are no settings required. SAH Series clocks also allows all system clocks to be diagnosed from a remote master clock location. These clocks even contain an automatic polarity detection feature which protects the system in case data is received with reversed polarity. These features provide significant flexibility and responsiveness. The microprocessor based movement automatically identifies anything from a basic sync–wire protocol to a technologically advanced two (2) or three (3) wire digital communication protocol, as well as RS485 communication. The SAH Series recognizes 59 or 58 minute correction, as well as National Time and Rauland. The SAH Series incorporates our digital communication protocol, which transmits a stream of data that constantly checks and corrects every clock in the system. This feature prevents the clocks from deviating from each other, while providing five (5) minute (max) system correction. The SAH Series clock can be run from a SMC 2000 or 3000 Series Master Clock, the SBD 2000 Series Digital Master Clock, the SSM Master Clock or the GPS. By using electronic components, the Sapling SAH Series analog clocks have a much less chance of mechanical failure.

Highlights

▶ Multiple sizes to select from: 24″, 36″, 48″
▶ Hour and minute hands
▶ Water resistant option
▶ Backlight option
▶ Energy efficient—
  • 190 mA @ 24 VAC
  • 45 mA @ 110 VAC/220 VAC
▶ Does not require an expensive master; it can be run off the SBD 2000 Digital Clock, SMC 2000 or 3000, the SSM Series Master Clock or the GPS
▶ Microprocessor based movement
▶ Automatic protocol verification
▶ Automatic frequency detection for time base
▶ Fully automatic plug and play; No settings required
▶ The clocks recognize:
  • Sapling Two (2) Wire Digital Communication
  • Sapling Three (3) Wire Digital Communication
  • Sapling RS485 Communication
▶ Recognizes sync–wire protocols such as:
  • 59 Minute Correction
  • 58 Minute Correction
  • National Time and Rauland
▶ Built–in protocol detection
▶ Built–in self–test function
▶ Automatic polarity detection
▶ Remote system diagnosis
▶ Quick correction for time change (max. five (5) minutes)
▶ Clocks will not deviate from each other (Digital communication protocol)
▶ Wide dynamic range for input voltage
  • 7 VAC—28 VAC (24 V model, RS485 system)
  • 85 VAC—135 VAC (110 V model, RS485 system)
▶ Plug in Molex connectors
▶ Available in 110 VAC, 24 VAC and 220 VAC
▶ Made in U.S.A.

SAH Series Large Clock

Architectural & Engineering Specifications

The secondary clock shall be Sapling SAH Series large analog clock with capabilities of utilizing two (2) and three (3) wire digital communication, RS485, 59 and 58 minute correction, and/or National Time and Rauland. The clock shall be available in sizes of 24", 36" and 48". The clock shall have a backlight option via a fluorescent bulb in 110 volt or 220 volt models. The clock will have a water resistant option as well. The clock will have self–diagnostic capabilities that will test the gearbox, verify the protocol, and perform a comprehensive analysis of the entire clock. The clock shall have remote diagnosis from the master clock location. Two (2) wire systems shall use the SBD 2000 Series Digital Master Clock, the SSM Master Clock, or the GPS in conjunction with the Converter Option. The two (2) wire system is to be capable of working with the SMC 2000 or 3000 Series Master Clock providing the auxiliary power supply is installed. Three (3) wire synchronous shall use the SMC 2000 or 3000 Series Master Clock. RS485 systems are to be capable of using any Sapling master clock to control the clock system. The clock shall have a metal case, and the crystal is to be constructed of shatterproof, polycarbonate material with no visible molding marks. Glass and visible molding marks are unacceptable. The clock shall have black hour and minute hands only.
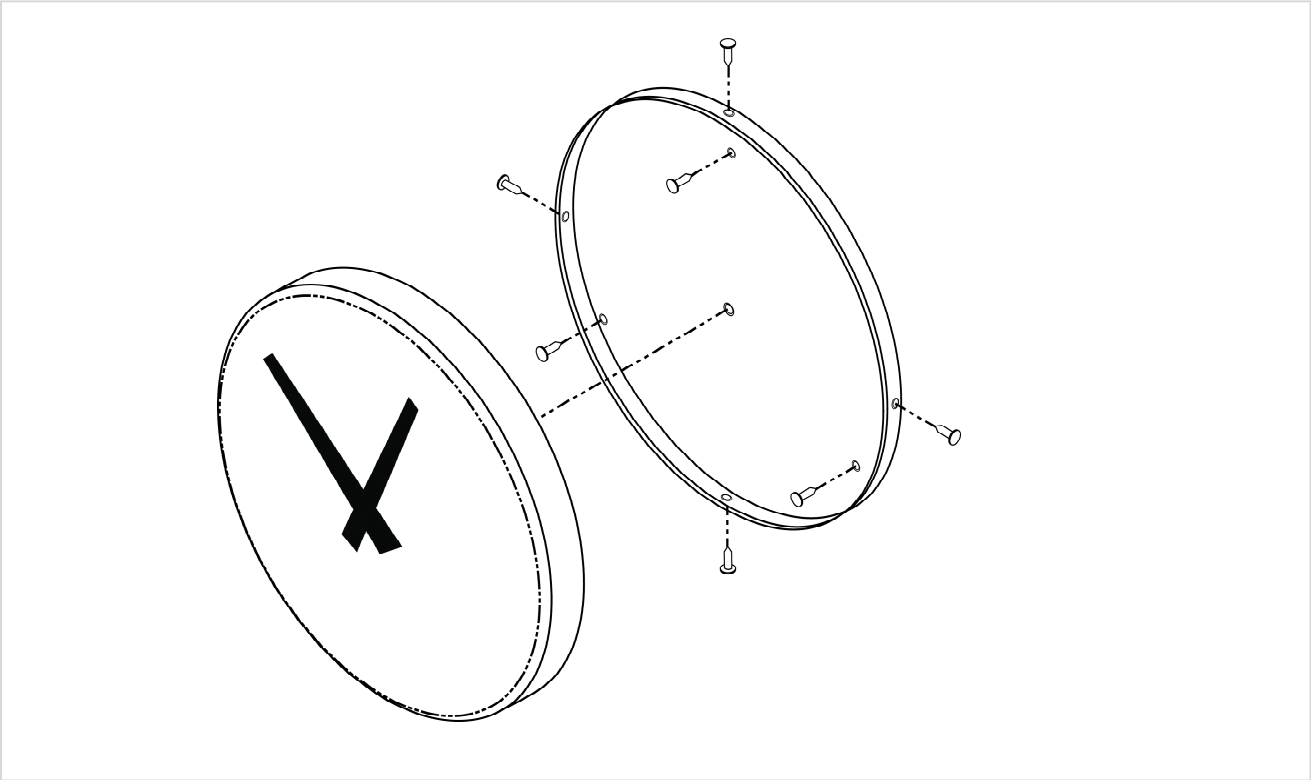
Specifications

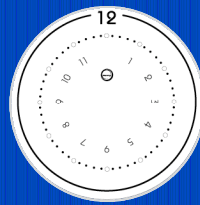|	
Time Base:	Automatic 50/60 Hz frequency detection (three (3) wire or RS485 system) Quartz (two (2) wire system)
Voltage Input:	85—135 VAC / 60 Hz 7—28 VAC / 60 Hz 220 VAC / 50 Hz
Average Current Consumption:	85 mA @ 220 VAC 190 mA @ 110 VAC 45 mA @ 24 VAC
Display:	12 or 24 hour format
Color:	Standard gray (custom colors available)
Dial:	Durable acrylic material
Case:	Smooth surface metal case
Crystal:	Shatterproof, side molded polycarbonate crystal
Temperature Range Operating: Shelf:	−15℃—50℃ −15℃—80℃
Movement Dimensions: (L x W x D)	2.72" x 4.36" x 1.55"
Backlight:	Fluorescent bulb (110 volt or 220 volt model only)
Power Kit Includes:	1—5 pin power harness (18 AWG) 1—4 pin RS485 harness (18 AWG) 1—ground wire (18 AWG) 4—10–32 x 1" screw 3—10 x 1.5" screw 3—blue plastic anchors

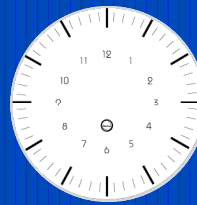## Mechanical Drawing

Dial Options

STANDARD CHOICE
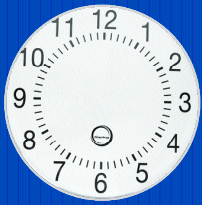
CUSTOM CHOICES

12 Hour
Style 1

24 Hour
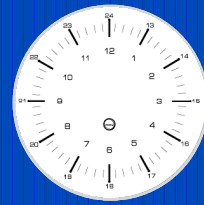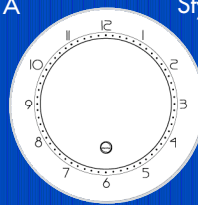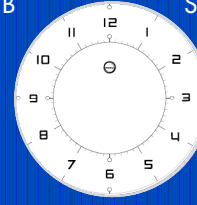Style 2

Style A

Style B

Style C

Style D

Style E

Ordering Information

Large Clock

SAH—1GS—ZZR—VBOD

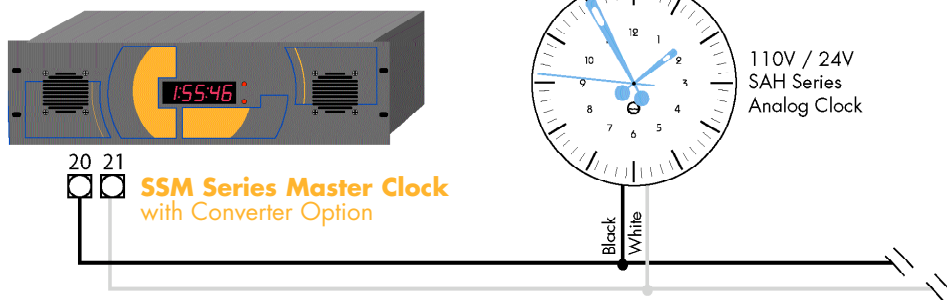| ZZ=Clock Size	V=Voltage	B=Backlight	O=Indoor/Outdoor	D=Dial

24=24"
36=36"
48=48"
	1=110 V/
	  60 Hz
	
	2=220 V/
	  50 Hz
	
	4=24 V
	  50/60 Hz
		0=No
		Backlight
		1=Include
		Backlight
			I=Indoor
			O=Outdoor
				See chart
				
				Style 1 or 2
				Style A–E
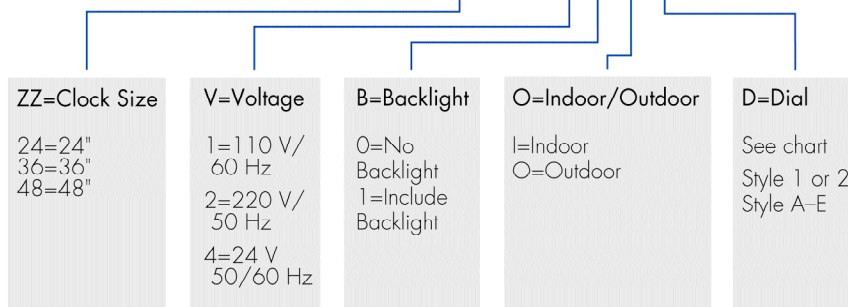
Where timing and technology meet

SAH Large Smart Clock

2 Wire Digital Communication

SSM Series Master Clock
with Converter Option

20 21

Black White

110V / 24V
SAH Series
Analog Clock

RS485 Communication

SSM Series Master Clock

4 3

Output Input

Red Blue Brown Purple Black White Green Ground

Output

White
Black

110 / 24VAC

110V / 24V
SAH Series
Analog Clock

3 Wire Digital Communication

Clock
On/Off
30 31

Clock
Circuit
28 27

SMC Series Master Clock
Requires: SMC—000—010—1
Power Supply

Black White
110 / 24VAC

Neutral Power Data

Neutral   White
Power   Black
Data   Yellow

White Black Yellow Green

Ground

110V / 24V
SAH Series
Analog Clock

Sync Wire Communication

Clock
On/Off
30 31

Clock
Circuit
34 or 33
36   37

SMC Series Master Clock

Black White
110 / 24VAC

Reset   Yellow
Power   Black
Neutral   White

Neutral White Black Yellow Reset Green

Ground

110V / 24V
SAH Series
Analog Clock

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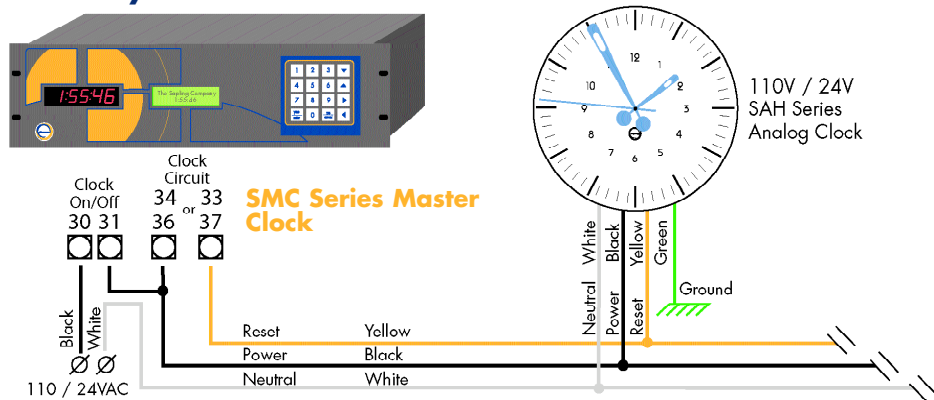
If a transformer is needed
for a 24 volt system,
please select from the
following:

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