Model 120A
GNSS Synchronized Clock

The Arbiter Systems®, Inc. Model 120A GNSS Synchronized Clock is a multi-satellite system (GPS, Galileo, GLONASS, BeiDou) timing source. Designed as an economical solution for reclosers and other enclosed installations, including a rugged, low-profile, bulkhead-mount antenna with 5 meters of cable. The Model 120A has a seventy-two channel receiver, capable of tracking up to 3 satellite constellations systems simultaneously providing a 100 ns worst-case accuracy. Two pluggable terminal strip outputs provide IRIG-B unmodulated, 1 PPS, or Programmable Pulse; software selectable. These outputs are configurable to a 50 ohm driver or a high capacity driver. The Model 120A comes standard with two communication ports, one RS-232 and one USB. A SPST relay is also included and is configurable to Out of Lock, Fault, Alarm, Stabilized, or Programmable Pulse. Power input accepts + 8 Vdc to + 32 Vdc

Specifications subject to change.

Receiver Characteristics

Timing Accuracy
Specifications apply at the output when receiving satellite signals, as of date of publication.
UTC/USNO ± 100 ns rms

Position Accuracy
2.5 meters, rms

Satellite Tracking
Seventy-two (72) channel receiver: GPS L1C/A, GLONASS L1OF, BeiDou B1I, Galileo E1B/C

Acquisition
50 seconds, typical, cold start
25 seconds, typical, hot start

I/O Configuration

Connectors
12-position pluggable terminal strip:
- Out 1: IRIG-B unmodulated, 1 PPS or Programmable Pulse; software configurable
- Out 2: IRIG-B unmodulated, 1 PPS or Programmable Pulse; software configurable
- RS-232: Transmit, Receive, and Ground
- Relay: SPST fail-safe, 0.12 A at 400 Vdc (400 mW); software configurable
- Power

USB micro connector
USB 2.0 serial port emulation, supports terminal configuration and firmware updates

F-Connector
Antenna, 5 Vdc compatible
Model 120A Specifications

I/O Configuration (cont.)

Programmable Pulse Output
Two programmable output pulses Out 1 and Out 2.
Modes:
- IRIG-B unmodulated
- Every 1 to 999 seconds
- Hourly at a specified offset
- Daily at a specified time of day
- DCF77

Serial Broadcast
Modes:
- Standard ASCII (IRIG-J)
- Vorne
- Extended ASCII
- ASCII with time-quality
- Custom
- NEMA $GPGLL
- NEMA $GPZDA

Interface

Operator Status LEDs
Locked (green)
Power (green)
Unlocked (red)
Fault (red)

System
USB Management and configuration
Terminal emulation: 115200 baud; 8 data bits; 1 stop bits; no parity
RS-232 1200 to 115200 baud; 7 or 8 data bits; 1 or 2 stop bits; even/odd/no parity
Pluggable terminal strip (Txd, Rxd, Gnd)
Configuration and Broadcasts

Power Requirements

Standard Voltage + 8 Vdc to + 32 Vdc, 5 W maximum
Inlet Pluggable terminal strip

General

Physical
Size 110 x 85 x 30 mm (4.3 x 3.4 x 1.2 in)
Mounting flanges included.
254 mm x 152 mm x 102 mm
(10 x 6 x 4 in), shipping
Weight 0.45 kg (1 lb), net
0.9 kg (2 lbs), shipping
Antenna Bulkhead (0.8 in threaded nut)
Cable Connection: TNC
Size: 60 dia. x 30 mm (2.4 x 1.2 in)
Weight: 125 grams (4.4 oz)
Antenna Cable RG-174/U, 5 m (16 ft) provided
Weight: 85 grams (3 oz)

Environmental
Temperature Operating: -40 °C to + 85 °C
Humidity Noncondensing

Certifications and Approvals

CE mark/label and certificate

Accessories

Included

<table>
<thead>
<tr>
<th>Description</th>
<th>Order No.</th>
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<tbody>
<tr>
<td>GPS Antenna with 5 m (16 ft) Cable</td>
<td>AS0111600</td>
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<tr>
<td>Setup Guide</td>
<td>PD0058300</td>
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Available

<table>
<thead>
<tr>
<th>Description</th>
<th>Order No.</th>
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<tbody>
<tr>
<td>Micro USB Cable, 1.8 m (6 ft)</td>
<td>CA0033700</td>
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<tr>
<td>BNC (Female) Breakout to 100 mm Wires</td>
<td>AP0008900</td>
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<tr>
<td>BNC (Male) Breakout to Screw Terminal</td>
<td>AP0015000</td>
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<tr>
<td>Manual</td>
<td>AS0111700</td>
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