

Indoor GPS Atomic Time Receiver

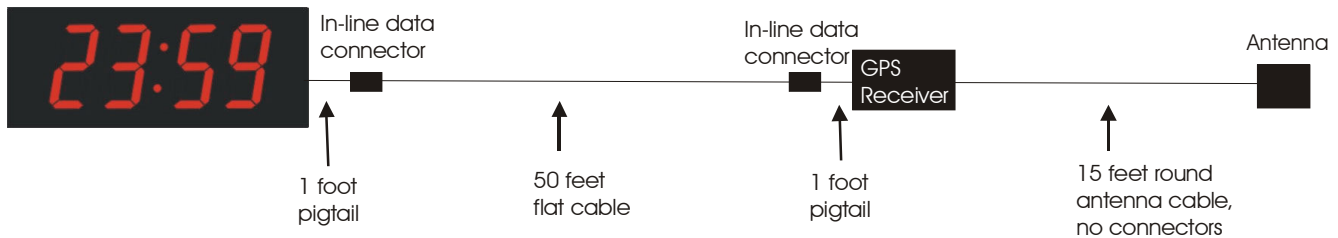
DO NOT USE PRE-MADE TELEPHONE RJ-11 IN-LINE CONNECTORS OR CABLES.

The GPS option allows legally traceable time to be obtained from global positioning satellites. The digital clock is updated every second from the satellite signal and is accurate to about one millisecond. Clocks that contain a GPS atomic clock receiver are equipped with an antenna and GPS module. Clocks with a GPS atomic time receiver have a short pigtail at the back of the clock. This pigtail includes a telephone type connector. Attach the line from the GPS receiver/antenna to this connector.

Mode 32-15 must be set to 2 to enable GPS reception. Display Mode 20-1=16 will display the number of satellites being received on the leftmost two digits. The rightmost digit will display a 1 when data is being received. This value should alternate between 0 and 1 once per second as data is received. If the data indicator does not blink once per second, check for a reversed data cable or connector.

RS422 wiring protocol is used between the clock and the GPS receiver/antenna. The cable may be up to 4,000 feet long. Long cable runs require CAT-5 twisted pair cable, while short runs may use six conductor flat cable and in-line connectors. Cable and connectors must be the straight-through data type, not telephone type. **DO NOT USE PRE-MADE TELEPHONE RJ-11 IN-LINE CONNECTORS OR CABLES.**

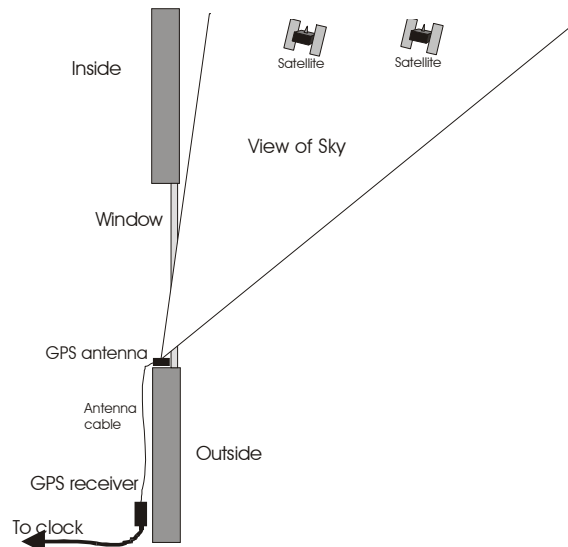
GPS Receiver



There are usually several satellites overhead at any point in time. The GPS receiver only needs to receive one satellite to obtain atomic time.

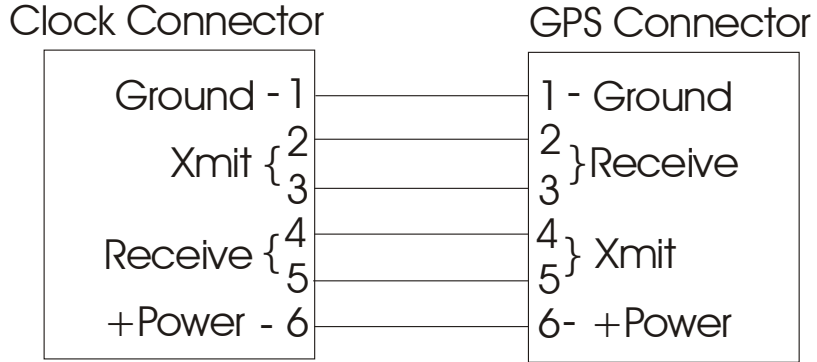
The antenna may be mounted indoors on a windowsill. This mounting method allows a partial view of the sky, which is enough to receive 2 to 3 satellites. The antenna may also be placed below a skylight. While the antenna may be placed outdoors, the GPS receiver is not water-resistant and must be kept dry.

The following diagram illustrates antenna positioning:



The cable between the clock and the GPS receiver may be extended. For short cable runs under 200 feet, either twisted pair or flat cable may be used. For long runs up to 4,000 feet, use twisted pair cable. **DO NOT USE PRE-MADE TELEPHONE RJ-11 PLUGS OR IN-LINE CONNECTORS.**

For custom cable installation, note the following cable pin-out:



Note: Do not use pre-made CAT-5 cables designed for computer networks. Connector wiring is not the same. CAT-5 cable may be used if the connectors are wired as per the above diagram.