



Model 9150-3059

Overview

The Model 9150-3053 and 9150-3059 Airborne Time Code Generators produce a modulated IRIG B time code signal for applications requiring accurate time data. Completely self-contained, this unit employs CMOS components to minimize space and power consumption. Timekeeping functions are performed under microprocessor control. The solid state LED time display indicates time of year in days, hours, minutes and seconds. Adjacent controls are provided to manually set the time of the generator. Generator time can also be initialized by means of an IRIG B time code input. The VERIFY indicator shows that the time code input has been successfully used to preset the generator time. The time code input can then be disconnected.

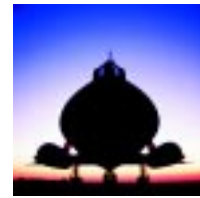
Designed for operation on either 12 or 28 VDC power, the unit contains a rechargeable NiCd battery supply for 2 to 4 hours of standby operation. An internal trickle charger maintains battery charge without affecting battery life. A completely discharged battery pack can be recharged in approximately 24 hours. Normal battery life expectancy is five years. The IRIG B time code output signal will be produced regardless of which power source (external DC or internal battery) is selected.

A precision temperature-compensated crystal oscillator (TCXO) serves as the internal time base. Internal adjustments are provided for oscillator frequency calibration and time code carrier phase adjustment. The voltage level of the output time code signal is fixed at approximately 3 V P-P.

Operating controls (START, STOP, POWER) are located on the front panel, as are the power and code output connectors.

Two optional configurations are available that will address nearly all airborne or miniature time code generator requirements. The two configurations are defined on the opposite page.

Applications



Flight Test



Space Flight



Test Ranges

Airborne Time Code Generator

Models 9150-3053 & 9150-3059

Specifications

Time Base

Oscillator Type	Quartz crystal controlled CMOS
Oscillator Output	1 MHz square wave
Oscillator Stability	±0.0001% over -20C to +70C
Oscillator Settability	±0.0001%
Oscillator Aging	5X10 ⁻⁶ /year

Signal Output

Serial Code	IRIG B122 (modulated)
Carrier Frequency	1 kHz square wave
Carrier Amplitude	3 V P-P
Modulation Ratio	Nominally 3:1
Source Impedance	600 ohms
Connector	BNC

Physical

Size:	
9150-3053	2.75"H x 3"W x 7.0"D
9150-3059	2.75"H x 3"W x 5.75"D
Weight	Less than 1.5 pounds
Mounting	External flanges (one on each end)

Environmental

Operating Temperature	0C to +60C
Storage Temperature	-60C to 85C
Operating Humidity	0 to 95% relative (noncondensing)
Storage Humidity	0 to 100% relative
Altitude	Sea level to 100,000 feet
Shock & Vibration	Designed to meet MIL-E-5400 Curve II (9150-3053) Curve III (9150-3059)
RFI/EMI	Designed to meet MIL-STD-826 Class C



Input Power

Voltage	+12 VDC ±10% or 24-32 VDC (user selectable by connector pin)
Current:	
9150-3059	Approx 15 mA operating plus 20 mA during display activation
9150-3053	Approx 25 mA operating plus 20 mA during display activation
Internal Charger	Approx 5 mA operating current (included in total current above)
Battery Life:	
9150-3059	2-4 hours on a full charge
9150-3053	8-12 hours on a full charge



9150-3053 Added Features

- Parallel BCD Time-of-Year (days, hours, minutes, seconds, and milliseconds)
- Extended Internal Battery (standby: 8-12 hours)
- External Start/Sync-Verify (input via a pin in the power connector)
- DC Level Shift Code or 1 PPS Output (selected by internal jumper - output via a pin in the power connector)

Datum-San Jose

6781 Via Del Oro
San Jose CA 95119-1360
Toll Free (800) 348-0648
Telephone (408) 578-4161
Fax (408) 574-4950
e-mail salessj@datum.com

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