Operating Manual

9520-2000 Time Display

▷ **Datum**

Timing, Test & Measurement

Copyright Notice

9520-2000 Time Display

Chapter One

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INTRODUCTION

The Datum Model 9520 Time Display is a microprocessor-based serial time code reader.

It accepts any of the IRIG or other codes listed on the rear panel as its serial input. This time code is decoded and reformatted into information that provides a parallel (BCD) digital output and is used to drive a visual display. Switches on the rear panel allow you to offset the displayed time from the time-code input to accommodate time zone offset requirements.

Chapter Two

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INSTALLATION/OPERATION

HOW TO INSTALL AND OPERATE

1. Locate the equipment in the desired mounting area.

2. Connect to a source of AC power, using the power cord supplied with the instrument. (See Chapter Three for specifications.)

3. Connect the appropriate input signal to the code input. (See Chapter Three for specifications.)

4. Configure rear panel switch SW1 to correspond to the appropriate input code (See Figure 2-1 for control and connector locations).

5. Configure rear panel switch SW2 for the local time offset if desired. See Table 2-1.

6. If no time code is present when you apply power, the display will flash eights.

7. If time code is present when you apply power, the display will be resent to zero. It will then start counting. After a few seconds, the unit will display the decoded time. If the time code stops, the display will stop updating.

FIGURE 2-1. REAR PANEL
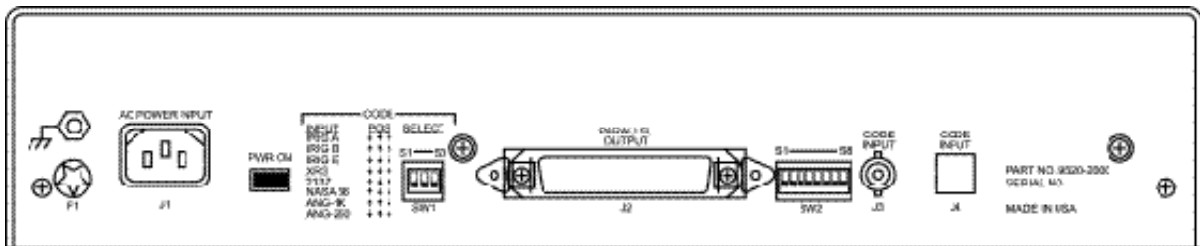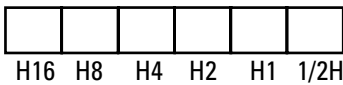
SW2 SWITCH FUNCTION SELECTION

```
S1 ─────────────── S8
   ┌──────────────────────┐
 │ │ ┌──┬──┬──┬──┬──┬──┬──┬──┐
 │ │ │  │  │  │  │  │  │  │  │
 ▼ │ └──┴──┴──┴──┴──┴──┴──┴──┘
   │  1  2  3  4  5  6  7  8
   └──────────────────────┘
            SW2
```
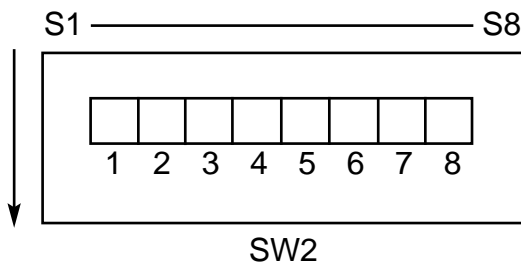
Refer to this switch diagram for ON/OFF positions of the switches and disregard ON/OFF markings on the switch itself (if any).

TABLE 2-1

SWITCH	FUNCTION SELECTION
SW2-1	+/- Time Offset from reference time code. ON (-) time offset will be subtracted from reference time. OFF (+) time offset will be added to reference time.
SW2-2 to SW2-7	Hours offset in binary SW2-2 SW 2-7 ┌──┬──┬──┬──┬──┬──┐ │ │ │ │ │ │ │ └──┴──┴──┴──┴──┴──┘ H16 H8 H4 H2 H1 1/2H Select from 1 to 23 1/2 hours.
SW2-8	ON = Leap Year OFF = not Leap Year

Example: For a "-14hrs and 30 minute" offset, configure as follows:

SW2-1	ON	(-)
SW2-2 (16)	OFF	
SW2-3 (8)	ON	
SW2-4 (4)	ON	14 HRS
SW2-6 (1)	OFF	
SW2-7	ON	(30 MIN)
SW2-8	LEAP YEAR	

If the reference time is 253:05:44:55 a time of 252:15:14:55 will be displayed.

*** WARNING ***

Selecting an hour offset greater than (+/-) 23 hrs. will result in undefined operation and meaning-less display. All Selections are valid on power on only.

Chapter Three

SPECIFICATIONS

INPUTS AC POWER

Voltage: 115/230 VAC ±10% (see note).
Frequency: 48 – 62 Hz.
Power: Less than 60 Watts.

NOTE: This unit is shipped for use with 115 VAC unless identified for 220/230 VAC on rear panel. Jumpers are provided internally on the power supply to allow selection of the input voltage. To configure the unit for 220 VAC operation, remove the jumper between E1-E3 and E2-E4, and install a jumper between E2-E3.

CODE INPUT

Format: IRIG A, IRIG B, IRIG E, XR3, 2137, NASA 36, GSQ-53 (1 kHz), GSQ-53 (250 Hz)
Configuration: Amplitude modulated carrier.
Modulation Ratio: 2:1 to 4:1
Amplitude: 0.5V to 10V peak to peak.
Input Impedance: Greater than 10K ohms.

OUTPUTS

VISUAL DIPLAY

Nine-digit, 1.5-inch character height display, representing time-of-year in seconds, minutes, hours, and days.

PARALLEL OUTPUTS

Format: 46 bit BCD time of year (milliseconds, seconds, minutes, hours, and days).
Output Levels: BCD outputs are TTL positive true logic.
Pin Assignments: See Table 3-1 (this section).

TIME BASE

Crystal controlled 4 MHz oscillator with an overall tolerance of ±1% from 0 -70ºC.

ENVIRONMENT

Temperature: 0ºC to + 65ºC.
Humidity: 0 to 95% relative.

SIZE

Width: 19 inches
Height: 3.47 inches
Depth: 6.18 inches

TABLE 3-1
Parallel Outputs - Pin assignments

PIN	TERM	PIN	TERM
1	GROUND	26	UH8
2	ST	27	TH1
3	US1	28	TH2
4	US2	29	TH4
5	US4	30	TH8
6	US8	31	UD1
7	TS1	32	UD2
8	TS2	33	UD4
9	TS4	34	UD8
10	HOLD*	35	TD1
11	UM1	36	TD2
12	UM2	37	TD4
13	UM4	38	TD8
14	UM8	39	HD1
15	TM1	40	HD2
16	TM2	41	HD4
17	TM4	42	HD8
18	SIGN*	43	ms10
19	ms1	44	ms20
20	ms2	45	ms40
21	ms4	46	ms80
22	ms8	47	ms100
23	UH1	48	ms200
24	UH2	49	ms400
25	UH4	50	ms800

* Not defined for this model *

REFERENCE DOCUMENTS

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Timing & Time Code Reference Book
www.datum.com/TTM/pdf/timeref.pdf

Glossary of Terms
www.datum.com/glossary.html

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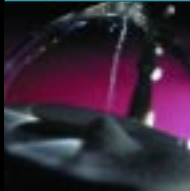Fax: +1-978-927-4099

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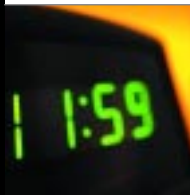## RUBIDIUM PRODUCTS
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