Supco

78

SCALE   SPEED

TEMPERATURE
RECORDER

1 2 3 4 12 6 5 7 8 9 10 11 13 18 14 15 19

TWO REAR KEYWAY SLOTS
FOR WALL MOUNTING

REAR VIEW

COMPARTMENT FOR
BATTERY ACCESS AND
PROBE CONNECTION.

BATTERY HOLDER

16

PLUG-IN AC
ADAPTER

17

CHANGING PENS

LATCH

FIG. 1

INTRODUCTION

The CR87B is a precision instrument used to monitor and record temperature on a 6" circular paper chart. The CR87B may be carried as a portable instrument or mounted in a fixed location.

The CR87B offers a variety of features to meet any temperature recording requirements. A combination of three temperature ranges and four chart speeds provide a high degree of flexibility. In addition, the chart rotation may be set for single or continuous turn operation as required by a particular application. To protect the data being recorded the CR87B uses an automatic battery backup to maintain operation during a power outage.

CR87B FEATURES AND CONTROLS

1. The **3 DIGIT TEMPERATURE DISPLAY** shows temperature of the environment being monitored. When the batteries are nearly discharged, the display will alternate the display reading and "LO" to advise the operator that the batteries are discharged and the CR87B will shortly cease operation.

   NOTE: The battery backup feature of the CR87B is primarily intended for use in situations where primary power is lost for short periods of up to 48 hours. The CR87B is not intended to be used as a battery powered instrument. If the CR87B is to be stored for an extended period, it is strongly advised to disconnect the battery pack and remove the batteries to avoid damage to the instrument from battery leakage.

2. The **TEMPERATURE RANGE SELECTOR** allows the user to choose the desired temperature range for measurement and recording.

3. The **CHART SPEED SELECTOR** allows the user to select the time of one full chart revolution. The corresponding chart has to be chosen according to the desired chart speed. Chart part numbers are listed in this manual.

4. The **PEN POSITION ADJUSTMENT KNOB** allows the user to adjust the position of the chart pen.

5. The **CHART ADVANCE BUTTON** allows the operator to set the chart to the correct time. Press and hold the chart advance button until the desired time lines up with the Time Pointer (Item 11). The chart is rotated counterclockwise only. **CAUTION: Movement of the Chart Spindle (Item 9) by hand may cause permanent damage to the chart mechanism.**

6. **TEMPERATURE ADJUSTMENT** feature allows the user to adjust the reading of the digital display during periodic calibration. The CR87B has been factory calibrated and requires no adjustment to meet all published specifications.

7. The **POWER ON**/**OFF** / **CONTINUOUS** / **SINGLE CHART SELECTOR** allows the user to apply power to the CR87B and to select Continuous or Single Turn for the chart rotation. When power is first applied to the CR87B, the display will show "888" to test each segment of the display, and the pen will move to the edge of the chart. The pen will then move to the correct position on the chart. In the Continuous switch position, the chart will rotate until power is removed. In the Single Turn switch position, the chart will make one complete revolution and stop.

A blinking dot on the display (Item 1) will indicate that the chart has made one complete revolution and stopped. **To reset the chart for another revolution** place the switch in the Contin-uous switch position until the blinking dot goes out and then slide the switch back to the Single Turn position. The chart will make one complete revolution and stop.

DO NOT move the pen by hand or interrupt the pen movement. Failure to observe this will cause the pen to read incorrectly and may result in damage to the pen mechanism.

8. The **RECORDING PEN** contains special ink. The pen has a wrap-around arm latch which makes the pen replacement "A SNAP!" To replace the pen, gently lift up the PEN ARM, (do not over bend pen arm) release the pen latch by pushing it down, and remove the pen; place a new pen on top of the pen arm, align the notches on the pen arm with the notches on the pen latch and close the latch by wrapping it around the pen holder until it is secured. Replace cap on the pen tip when the CR87B is not used to insure long pen life. *For pen installation see Fig. 1.*

9. The **CHART SPINDLE** holds and rotates the chart during the recording operation. **DO NOT ROTATE THE SPINDLE BY HAND AS IT MAY DAMAGE THE INTER-NAL MECHANISM.**

10. The **PAPER CHART** is 6 inches in diameter. The replacement charts are available from any of Sealed Unit Parts Co., Inc. authorized distributors in a box of 60 charts each. The chart part numbers are listed on the following page.

    TO INSTALL A NEW CHART disconnect power from the CR87B by selecting OFF with the Power / Single/ Continuous Chart Selector. Place pen cap on pen point. Gently lift the pen arm and while holding it remove the old chart. Slide a new chart under the pen holder and the chart holding tabs. Align the chart with the chart spindle. Apply power to the CR87B and rotate the chart by depressing the chart advance button until the time pointer is aligned with the line on the chart represent-ing the right time or day. Remove the pen cap. If desired, adjust the pen position according to the scale you wish to record on.

11. The **TIME POINTER** is simply a point against which the current time is being read during a chart rotation. Initially a new chart has to be rotated until the time pointer shows the right time and day when using a chart.

12. The **HANDLE** for carrying folds towards the back of the case to be out of the way when CR87B is mounted on the panel or on the wall.

13. The **KEYHOLE SLOTS** located on the back of the case are provided for wall or panel mounting.

14. The **REAR COMPARTMENT** was designed to store the battery holder for battery backup as well as the connection for the adapter box.

15. The **REMOTE TEMPERATURE SENSOR** is interchangeable. The furnished sensor has 15 feet of cable. The temperature sensor is an electronic digital pro-prietary design for precision and very high interference immunity. It utilizes the standard RCA connector. The sensor cable may be extended with an extension cable available from Sealed Unit Parts Co., Inc. or its distributors.

16. The **BATTERY HOLDER** is stored in the rear compartment for backup batteries. Use of 8 alkaline "AA" batteries is required for proper operation.

17. The **12VDC PLUG IN WALL ADAPTER** provides primary power for the CR87B. Alternate sources of 12 Volt power may also be used. This allows use of the CR87B in automotive, marine or other mobile applications.

18. The **POWER CONNECTOR** is a connection point for the 12VDC wall adapter or alternate source of 12VDC power.

19. Snap on **EXTRA SUPPORT LEGS** for better stability.

CHARTS

Temperature Ranges		Chart Speeds		
	6 Hours	24 Hours	7 Days	31 Days
-40°F to +30°F	CR87-4	CR87-1	CR87-7	CR87-19
-20°F to +50°F	CR87-5	CR87-2	CR87-8	CR87-20
+50°F to +120°F	CR87-6	CR87-3	CR87-9	CR87-21
-40°C to 0°C	CR87-13	CR87-10	CR87-16	CR87-22
-30°C to +10°C	CR87-14	CR87-11	CR87-17	CR87-23
+10°C to +50°C	CR87-15	CR87-12	CR87-18	CR87-24

SPECIFICATIONS

Temperature Scale Selectable (Fahrenheit Model)	-40°F to +30°F, -20°F to +50°F, +50°F to +120°F
Temperature Scale Selectable (Celsius Model)	-40°C to 0°C, -30°C to +10°C, +10°C to +50°C
Chart Speed Selectable	6 Hours, 24 Hours, 7 Days, 31 Day
Chart Speed Accuracy	+/-1%
Chart Diameter	6 Inches
Temperature Display	3 Digit LED 0.5"
Temperature Accuracy	+/-2°F (+/-1°C)
Temperature Sensor cable	Stainless steel tip submersible with 15 ft. of
Recording Pen	Ink Type
Power Supply optional)	120 VAC, 50/60 Hz., (220/240 VAC, 50 Hz.
Battery Backup	8 Alkaline "AA" cells (Not included)
Battery Life	48 Hours
Operating Ambient Temperature Range	+32°F to +120°F (0°C to +49°C)
Relative Humidity	96% maximum
Dimensions	9 ¼" x 7 ¼" x 2 ¾"
Weight	4 lbs., 7 oz.

CAUTION: The Temperature Recorder should be placed outside the chamber being monitored. DO NOT PLACE THE RECORDER DIRECTLY IN AREAS OF EXTREME TEMPERATURES, HIGH HUMIDITY OR HEAVY CHEMICAL CONTENT.