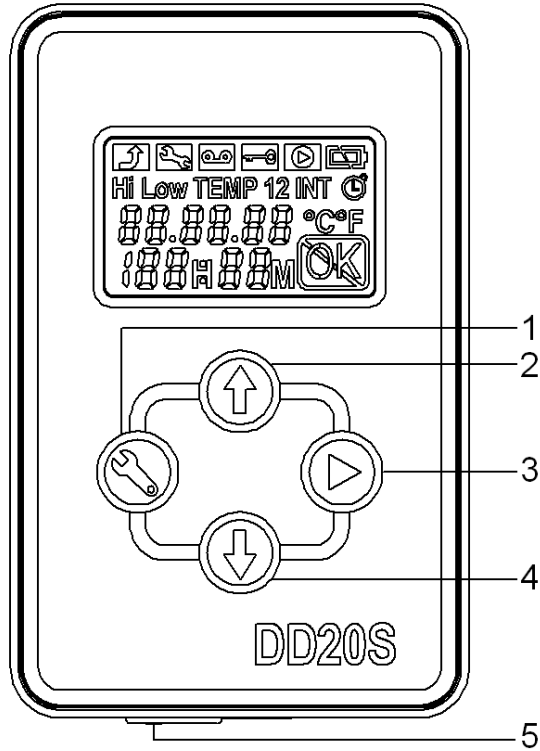# DD20S Digital Temperature Indicator

The DD20S is a smart digital temperature indicator. It can accurately monitor two low and two high preprogrammed threshold temperatures (between -35°C and +60°C), and will indicate time and duration of a temperature breach (up to 40 days). For refrigerated applications, the DD20S is accurate within ±0.5°C.

The DD20S is programmable, easy-to-use, and water-resistant (IP65). It may be activated with a delayed start time of up to 199 minutes. It is more reliable and accurate than chemical indicators, which may give false positive readings.

The DD20S can be reusable.

At temperatures Below -20°C (-4°F) the LCD will Exhibit Slower Response Times of Approximately 10 Seconds.

1 .Set Key
2 .Up Key
3 .Start/Pause/Enter
4 .Down Key
5 .Stopple of Waterproof

LCD Icon Explanation	
	Excursion Temperature
	Set
	Logger(Recording)
	Password
	Start
Hi TEMP	High Temperature
Low TEMP	Low Temperature
INT	Sample Interval
	Time
OK	OK or Not OK

Operating Instructions

1. Start a new DD20S: A new DD20S, Press key to start a new Digital Temperature Indicator. When power is on, LCD will show all for over 3 seconds.

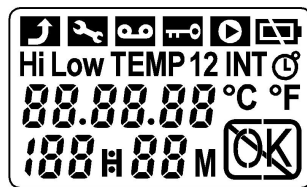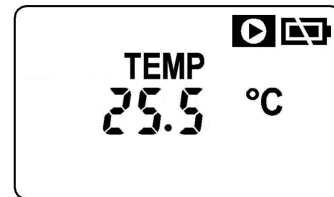Fig 1: Show all

After 3 seconds

Fig 2: Show actual temperature

After 3 seconds LCD will show actual temperature and sparkling, at this state, press or key to check parameters.

Press key for more than 3 seconds, The Digital Temperature Indicator will enter active mode (Recording state). Press into setting parameters menu. Press key into setting parameters menu. Press or key to checked parameters.
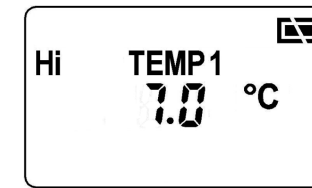
2. Check parameters
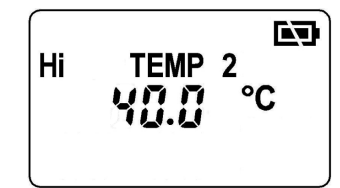
Fig 3: Actual date

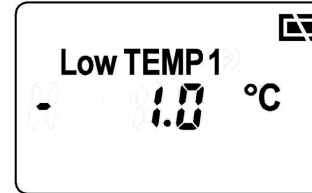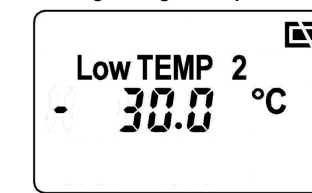Fig 4: High Temp. 2

Fig 5: High Temp. 2
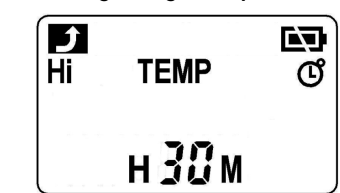
Fig 6: Low Temp. 1

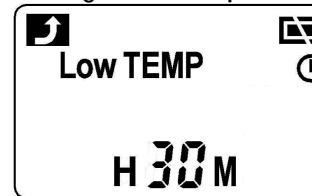Fig 7: Low Temp. 2

Fig 8: High Temp. Excursion

Fig 9: Low Temp. Excursion
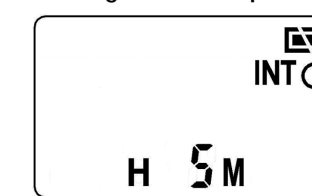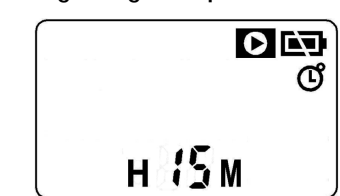
Fig 10: Sample interval time

Fig 11: Start delay time

3. Setting parameters: In the parameters list, Press into setting parameters menu. Press or key to select which parameter to setting. Press key into setting state. When press key, the check password menu will show:
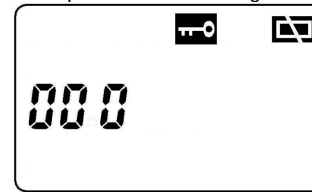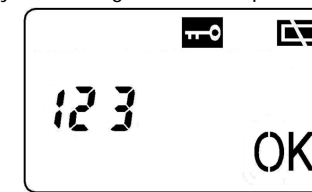
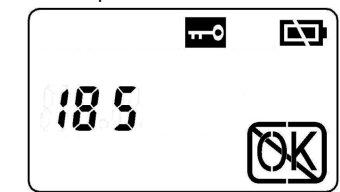Fig 12: Check password

Fig 13: Input password is correct

Fig 14: Input password is false

If input password is correct, the set parameters menu will show on:
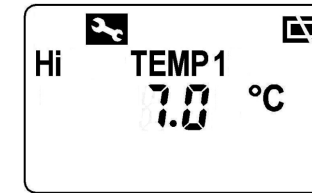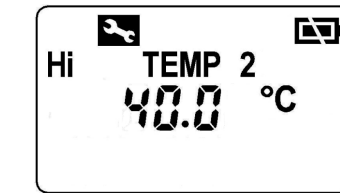
Fig 15: Set date and time
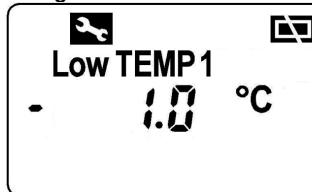
Fig 16: Set High Temp. 1

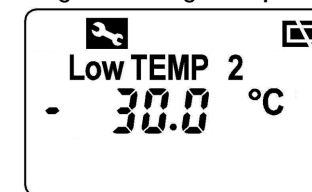Fig 17: Set High Temp. 2

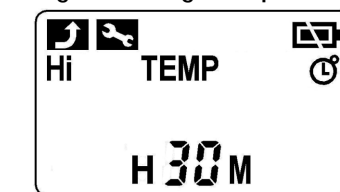Fig 18: Set Low Temp. 1

Fig 19: Set Low Temp. 2

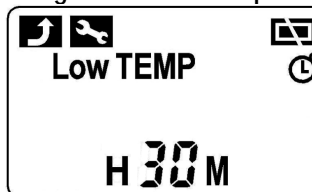Fig 20: Set High Temp. Excursion
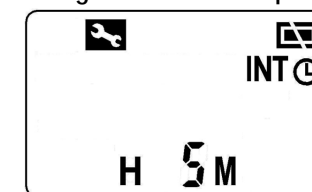
Fig 21: Set Low Temp. Excursion
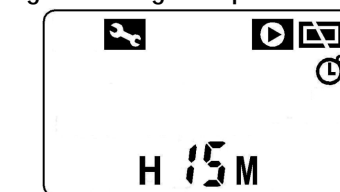
Fig 22: Set sample interval time
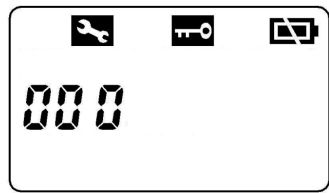
Fig 23: Set start delay time
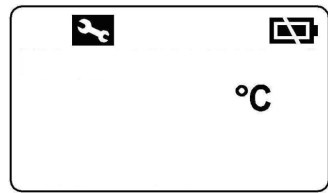
Fig 24: Set password

Fig 25: Set Temp. unit (/)

4. Active state: Press ▶ key for more than 3 seconds, The Digital Temperature Indicator will enter active mode (Recording state).

* Note: The 📼 will always spark when DD20S run at recording state.

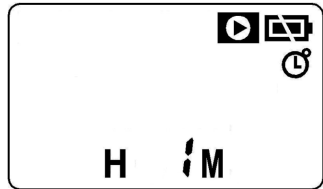When DD20S is start, the start delay will show on:

Fig 26: Start delay countdown(The ⏱ will always spark)

The start delay time will countdown, when start delay time is zero, DD20S will record temperature. After start delay time the Digital Temperature Indicator will always show the current date and "OK" or "⊠".
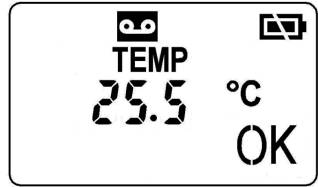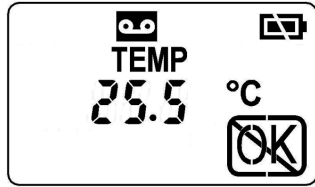
Fig 27: temperature is OK or **Fig 28: Temperature is Not OK**

5. Paused state: When the Digital Temperature Indicator recording state, Press ▶ key once, password menu will show on. When user input correct password, the DD20S will paused. ▶ and 📼 will sparkling when recording paused. Press ▶ key for more than 3 seconds, DD20S will continue recording temperature.
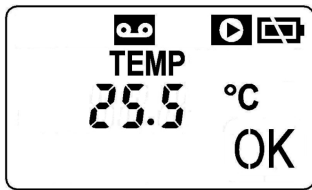
Fig 29: Pause the DD20S

6. Check recording data: When the Digital Temperature Indicator recording state, Press ▲ or ▼ to check the recording data.
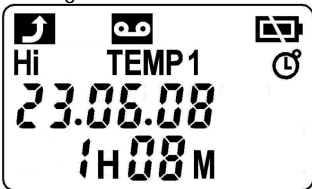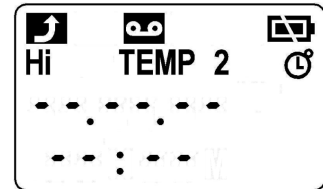
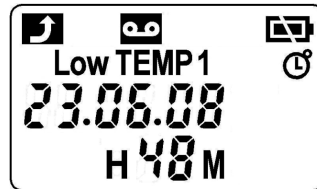**Fig 30: High Temp. 1Excursion Time**

Fig 31: High Temp. 2Excursion Time
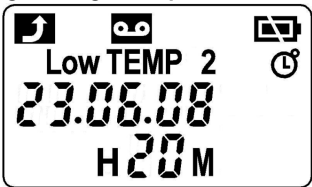
Fig 32: Low Temp. 1Excursion Time

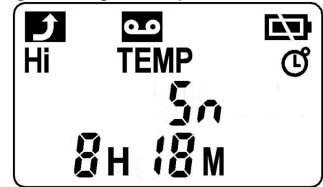**Fig 33: Low Temp. 2 Excursion Time**

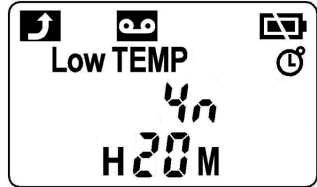**Fig 34: High Temp Excursion Times**
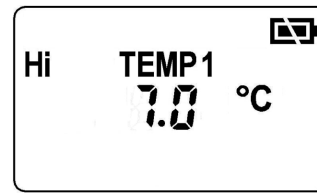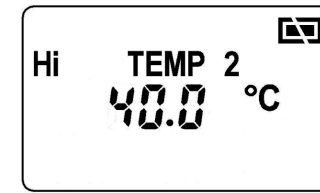
Fig 35: Low Temp Excursion Times

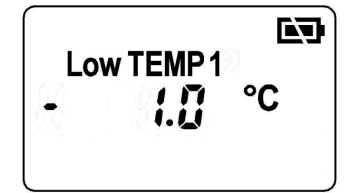**Fig 4: High Temp. 2**

Fig 5: High Temp. 2
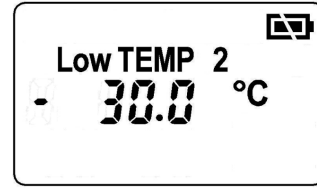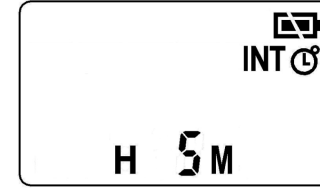
Fig 6: Low Temp. 1

Fig 7: Low Temp. 2

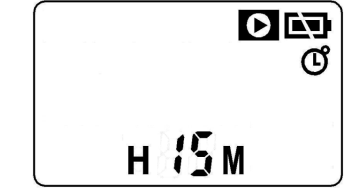**Fig 10: Sample interval time**

Fig 11: Start delay time

Fig 36: Record start time

7. Re-use the DD20S: When the Digital Temperature Indicator recording state, press 🔧 key the password menu will show on. User input correct password, the DD20S will be re-used. When it is re-used, all the recording data will lose, and the Digital Temperature Indicator will return to the "new" state.
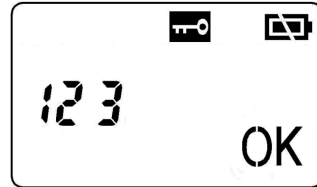
Fig 13: Input password is correct

BATTERIES

The DD20S incorporates visual low battery indication as follows:

🔋	🔋	🔋
'Battery OK': measurements are possible	'Battery Low': measurements are possible	'Battery Exhausted': measurements are not possible

SPECIFICATION

Operating Range	-35°C to +60°C(-31 to +140°F)
Accuracy	±0.5°C(0.9°F) from -35°C to +30°C(-31 to +86°F) ±1.5°C(2.7°F) from 30°C to 60°C(86 to 140°F)
Resolution	0.1°C/0.1°F
Battery Life	2 years at 22°C
Shelf Life	2 Years from Time of Programming
Dimensions	71 x 45 x 11 mm (2.80x1.77x0.4 inch)
Weight	26 grams(0.92 oz) including one lithium cell (CR2032x1)
Elapsed time	Max: 40 days
Protection class	IP65
8 Parameter Settings	High Temp 1; High Temp 2; Low Temp 1; Low Temp 2; Excursion Time High(Max: 40 days); Excursion Time Low (Max:40 days) Delay Start Time (0-199 minutes) ;Sampling Interval (1-199 minutes)
* Note: Do not submerge any part of the thermometer. The thermometer should be stored at room temperature between –35°C to +60°C (-31~140°F).	

⚠ CE ♻ Ref. No. 072009