Ultrasonic Flaw Detector CMSUFD70

Measuring Range and Measuring Error

Range of scanning: 0 mm ~10000 mm
Resolution for scanning: 0.1mm (2.5mm ~100mm)
1mm (100 mm ~10000mm)
Range of gain: 0dB ~130 dB
D-Delay: -20μs～+3400μs
P-Delay: 0μs～99.99μs
Sound speed: 1000 m/s～15000m/s

Operation Environment

Temperature:-20°C~50°C
Humidity:20%~90%RH
Free of strong magnetic field and corrosion.
Li battery7.4V 4800mAh
Overall dimension: 238mm×160mm×50mm
Weight: 1.0kg

Performance Features

- Automated calibration of transducer Zero Offset and/or Velocity;
- Automated gain, Peak Hold and Peak Memory;
- Automated display precise flaw location(Depth d, level p, distance s, amplitude, sz dB, ϕ);
- Automated switch three staff gauge ((Depth d, level p, distance s);
- 500 independence setup, any criterion can be input freely, we can work in the scene without test block;
- Big memory of 1000 A graph.
- Gate and DAC alarm - Acoustic-Optical alarm;
- RS232/USB port, communication with pc is easy;
- The embeded software can be online updated;
- Li battery, continue working time up to 10 hours;
- Display freeze;
- Automated echo degree;
- Angles and K-value;
- Lock and unlock function of system parameters;
- AWS D1.1;

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- Dormancy and screen savers;
- Electronic clock calendar ;
- Automated make video of test process and play; Connect the Upan,the length of video is unlimited
- Two gates setting and alarm indication;
- High-speed capture and very low noise;

- DAC, AVG, TCG, B Scan ; Solid metal housing (IP65);
- Automated calculate the size of the flaw with w ide bottom type in AVG function.
- 6dB DAC functions;
- Provides high contrast viewing of the waveform from bright, direct sunlight to completae darkness and easy to read from all angles;
- Powerful pc software and reports can be export to excel;

Technical Parameters

Designation	Technical Data
Range of scanning (mm)	Range of scanning (mm)：0～10000 Steps: 2.5,5,10,20, 30, 40, 50, 60, 70, 80, 90, 100,150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 10000 Adjusting step: 0.1mm (2.5 mm～99.9mm) , 1mm (100mm～10000mm)
D-delay (μs)	D-delay (μs)：-20～+3400 Steps: -20, -10, 0.0, 10, 20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800 900 1000, 1500, 2000, 2500, 3000, 3400. Adjusting steps: 0.1 (-20☒s～999.9☒s) , 1 (1000☒s～3400 μs)
P-delay (μs)	P-delay：0.0～99.99 Adjusting steps: 0.01

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Designation	Technical Data
MTLVEL (m/s	MTLVEL：1000～15000 10 fixed levels: 2260, 2730, 3080, 3230, 4700, 5920, 630012000, 13000, 14000, 15000 Adjusting steps: 1
Working mode	Single probe (receiving and sending), double probe (one for receiving and another for sending), transmission (transmission probe)
Frequency Range (MHz)	0.5~20
Gain adjustment (dB)	0~130 Adjusting step: 0.0, 0.1, 0.5, 1, 2, 6, 12
Reject	0%~80% of screen height, step: 1%
Vertical linear error	Vertical linear error is not more than 3%
Horizontal linear error	Not more than 0.2% in the scanning range
Sensitivity Leavings	≥62 dB
Dynamic range	≥34dB
Alarm	Three modes, i.e. forbidden wave, loss wave and auto
A-Scan display area	Full screen or local A-Scan display freezing and de-freezing A-Scan filling
Data save	1000 A-Scan images (including setting of instrument)

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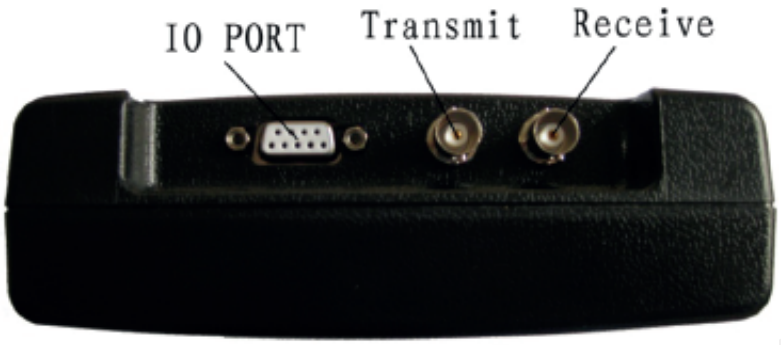
CMS METROLOGY
CONTROL MEASUREMENT SYSTEMS

Ultrasonic Flaw Detector CMSUFD70

Designation	Technical Data
Standard communication interface with PC	USB
Measuring unit	mm/inch
Battery	Li battery 7.4V 4800mAh
Power adaptor	Input 100V～240V/50Hz～60Hz Output 9VDC/1.5A
Working temperature	-20°C~50°C
Working humidity	20%~90%
Port type	BNC or LEMO 001
Overall dimension (mm)	50×160×238
Weight (kg)	1.0



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Appendix II List of Operations

All operations of AFD100 are realized by direct triggering of different key(s) on the panel or combination of them. The following list shows the concrete icons, names and functions of panel keys.

Direction: At normal mode, Press Left/Right key to select function group; Press Up/Down key to select the functional menu. At full screen mode, Press Left/Right key to move the gate; Press Up/Down key to adjust the gain value.

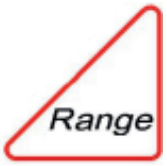
Press Knob

Enter: Press "Enter" key for switch of multi-used function item. Primary or fine adjustment of function items (if available) can be selected via "Enter" key.

Gate A: Press "Gate A" key to switch to gate A menu quickly. Press this key continually to select Gate A start, Gate A width or Gate A height for adjustment of corresponding functions.

Gain: To adjust the gain step and the gain value by the rotary knob. Press Left/Right key to select the gain step and the gain value .Gain adjustment range is 0dB~120dB. the gain step will display 12.0dB, 6.0dB, 2.0dB, 1.0dB, 0.5dB, 0.1dB and 0dB in cycle. Select suitable gain step for fast adjustment of gain.

Full Screen: In ASCAN mode, press "Full Screen" key to select normal mode and amplified mode of display.



Detection zone: Press "Detection Zone" key to switch to detection zone menu quickly for adjustment of detection zone.

Next page: All function groups are arranged in different pages, press "Next page" key to go to expected page.

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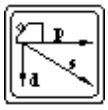
Extend key: To extend the display and show detail of waveform

Freezing: During operation, press “Freezing” key to freeze the wave and data displayed on the screen. Press again for defreezing.

save: The report will be automatically saved into the first umpty memory section after the No.1 memory section.

Auto gain: Adjust the amplitude of the echo in gate to 80% of the screen height automatically.

Peak Memory: Press “Peak Memory” key to enable/disenable peak memory.



Measure Display: Press “Measure Display” key to select display method of measure result.

Dynamic record: On/off Dynamic record(make video of the test)

Setting: Shortcut key to select the function group of setting.

Probe: Shortcut key to select the function group of probe.

System Config: Shortcut key to select the function group of CFG.

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DAC/AVG: Shortcut key to select the function group of DAC/AVG.

Auto C: Shortcut key to select the function group of Auto C.

Soft power switch: Start/shutdown the machine.

C

Charge LED: This LED (Green) illuminates during charging and goes off as charge ends.

A

Alarm LED: This LED (Red) illuminates as the gate alarm is effective .

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