Comparison between CTS-49/59 and Smartor (Thickness Measurement)

Model	CTS-49	CTS-59	Smartor
			
Display Monitor	800×480 pixels, 5-inch high resolution color TFT-LCD monitor with high-brightness LED backlight (visible under sunshine)		5.7-inch high brightness TFT-LCD, 640 ×480 pixels
Measurement mode	Standard（R-B1, transmit pulse to the first echo）		Standard（R-B1, measurement from transmit pulse to the first bottom wave）
	Through coating measurement（B1-B2, or Bm-Bn）		Echo to echo(B1-B2,measurement by auto-tracking the second bottom wave according to the first bottom wave)
	All measurements using Zero Crossing.		
		With known coating velocity, coating thickness can be measured.	
Measurement range	0.5～600mm（subject to probe, material, temperature and selected configuration）		
Display Resolution	0.01mm / 0.1mm（0.001 in / 0.01 in）		0.001mm / 0.01mm / 0.1mm （0.0001 in /0.001 in / 0.01 in）
Compatible probe	2MHz dual crystal	Smart-dialog 2MHz dual crystal	
	5MHz dual crystal	Smart-dialog 5MHz dual crystal	
	7.5MHz dual crystal	Smart-dialog 7.5MHz dual crystal	
	7.5MHZ, single ceramic delay type	7.5MHz, single ceramic delay type	
	High temperature	High temperature	
Velocity range	400～15000 m/s		100~20000m/s
Gain	0-110dB manually adjustable/auto (for auto-search)		0-110dB Manually adjustable ,step:0.5/2/6/12dB Auto adjustable (for auto-search or auto-gain)
Auto search	Off/On: With this function activated, the proper display range and gain can be adjusted automatically based on the measured waveform echo, which improves measurement efficiency.		
rectification	RF /Full Filter/Positive/Negative		

Pulser	Negative square wave transmission, with pulse-width and voltage auto fits the probe		
Measurement times	4/8/16/32		
Display error	With a configured probe:		
	0.80mm ～ 9.99mm: ± 0.05mm		
	10.00mm ～99.99mm: ± (1‰H + 0.04)mm		
	100.0mm ～400.0mm: ± 3‰H mm		
	Note: H is thickness of the tested material.		
Tube Wall thickness measurement	With a configured probe, it can measure steel tube with diameter not less than 20mm and wall thickness not less than 2.0mm		
Correction	a. Fast zero point calibration with the built-in test block.		
	b. User-defined calibration (single/dual point calibration)		
Measurement function	Standard/ minimum/ maximum/ average/ difference		
Interface mode	Standard /Simple menu measurement interface		
Other functions	Velocity dynamic measurement, measurement value over-limit symbol/sound alarm and freeze function.		Velocity dynamic measurement, measurement value over-limit symbol/sound alarm and freeze, history reading column, last reading maintained,mm/inch switch, outdoor mode.
Vertical/horizontal screen	Portait/Landscape screen/auto (gravity-sensing auto switch), suitable for left/ right handedness.		
B-scan	——	B-scan	B-Scan
Storage function	Up to 10,000 sets of measurement data (including measurement value, velocity and 3 file formats for application);	Mini SD card(8G) Up to 20,000 sets of measurement data (including measurement value, velocity and 5 file formats for application);	SD card(16G)
	Up to 100 sets of parameter data (such as measurement value and system setting)	Up to 100 sets of parameter data (such as measurement value and system setting)	
	measurement data sets can be stored on SD card up to card capacity		Save, recall and delete the parameter, data sets, printscreens, depends on the SDcard capacity.
Data transmission	The data can be stored to a micro SD card and transferred to a PC via the card reader;		Playback analysis, report of parameters, data sets, printscreen files in SuporUp software.
	It can also be transferred to a PC via the miniUSB port.		It can also be transferred to a PC via the miniUSB port.
Measure unit	inch/mm		inch/mm
Language	English/Chinese/Spanish/German/Janpanese/Russian/Polish//Portuguese /French		English/Chinese/German /Russian/Polish/Hungarian /Turkish

Auto shutoff	Off/2/5/10/20/30 minutes for selection		
Operation temperature	(-)10~45℃		(-)10~45℃
Power supply	a. DC 12V power adapter		a. DC 12V power adapter
	b. ≥6 hours' operation with 7.4V rechargeable lithium battery set		b. ≥8 hours' operation with 7.4V rechargeable lithium battery set
Battery charge time	a. With battery in the system: approx. 6 hours	a. With battery in the system: approx. 6 hours	
	b. With the configured external fast charger: approx. 3 hours	b. With the configured external fast charger: approx. 3 hours	
Dimension and weight (WxHxL)	105 mm × 180 mm × 42 mm		198mm × 128mm × 52mm
	About 600g with battery		About 900g with a 240g battery
System port	MiniUSB, micro SD card holder, DC-IN（DC12V input） LEMO00 compliant（T、R）		MiniUSB, SD card port, DC-IN（DC12V input）,VGA port LEMO00 compliant（T、R）, Encoder port
New Functions		MULTI layers Measurement, COAT Measurement Function, V-PATH Function, TDG Function, TEMP function.	Multiple conventional UT functions MULTI layers Measurement, COAT Measurement Function, V-PATH Function, TDG Function, TEMP function.
IP Standard	IP54		IP66

Conclusions:

Smartor is better than CTS-49/59 in the following aspects:

1. Display Screen (5.7-inch)
2. Battery (Operating time with battery≥8h)
3. Measure Range (100~20000m/s)
4. Storage Function (SDcard-16G)
5. Data Transmission and Analysis (SuporUp software)
6. Multiple conventional UT functions

See the future
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