

GE  
Sensing & Inspection Technologies

# USM Go

## Ultrasonic Testing



The USM Go is the lightest and most portable ultrasonic flaw detector available from GE Sensing & Inspection Technologies. The USM Go is designed for ease of prolonged operation in the harshest inspection environments in the oil and gas, aerospace, power generation and automotive industries.



# USM Go - Integrating years of GE experience and expertise in ultrasonics in a portable flaw detector.



## Ergonomically Designed with the User in Mind

The USM Go ultrasonic portable flaw detector has been ergonomically designed to provide an instrument which is light, small and easy to use in the harshest of inspection environments. Its ergonomic features include;

### Portability

- Small size and weight, which allow the instrument to be easily operated in confined spaces and areas of difficult access.
- Light enough to be carried throughout a whole day's shift
- Battery provides up to 5,5 hours operation. Can be recharged on- or off-board.

### Easy-to-Read Screen

- A display screen which is the same size as those in other GE flaw detectors, even though the instrument is much smaller than other instruments in the range.
- An 800x480 pixel display, which is better resolution than a standard DVD.
- A screen with an optimized aspect ratio to ensure highly defined echo separation.
- A screen which can be easily viewed, whether hand-held or desk-mounted.
- A screen which has been ergonomically sized to help reduce eyestrain.

### Ease of Use

- Can be operated with one hand, leaving other hand free for other tasks, such as maintaining probe in optimum position or holding onto ladders.
- Features incorporated pressure-sensitive, navigation joystick control derived from the range of remote visual inspection equipment offered by GE.

- All controls within fingertip reach. User can dedicate four function keys according to preference.
- A "Flip" function allows the instrument to be used equally well by left-handed and right-handed people.
- A detachable stand allows the user to optimize the viewing angle, when the instrument is desk- or bench-mounted. The attachment point is suitable for a standard tripod thread.

## Increasing Productivity

The USM Go features intuitive operation so there is virtually no time-consuming, learning curve. You are productive from the moment you pick it up! Navigation is simplified using the proven graphical user interface (GUI) and the innovative joystick, allowing one-handed operation and fast and accurate adjustment.

Other features allowing increased productivity are:

- A robust moulded rubber casing to withstand the harshest environments and significantly reduce downtime. The instrument is dust- and water-proof to IP67 and is tested to withstand shock and vibration.
- A standard USB connection to allow data to be downloaded from the flaw detector for further analysis or storage. The instrument is standard delivered with a 2 GB SD memory card (multiple cards can be used).
- Reports are produced in jpeg or bmp format so there is no need for special reading software.
- A simple on-board data logger to collect and save thickness measurements.
- State-of-the-art electronics, including digital amplifier, square wave pulser (optional) and digital filters for a wide range of application benefits.



- A wide Pulse Repetition Frequency range. This allows the USM Go to be used at low PRF to inspect forged parts for inclusions and porosity without any “ghost” echoes and just as easily find application in weld inspection at high PRF when fast and regular scanning movement is required to optimize inspection times.

### Versatile and Upgradeable

Customized versions of the USM Go are also available, specially adapted to meet specific inspection codes or applications. For example, an optional square wave pulser can be supplied for applications involving the inspection of highly attenuative material, such as castings and forgings. The versions shown in the table are currently available. For more detailed information, please contact your local GE representative or visit [www.geit.com](http://www.geit.com)

### A Wide Range of Applications

The USM Go has been designed to provide flaw detection capability in inspection situations throughout the industrial and process spectrum, from aerospace to power generation and from the automotive sector to the oil and gas industry.

These include:

Weld Inspection

Inspection of Forgings and Castings

Inspection of Rails

Inspection of Composites

	USM Go Base	USM Go AWS	USM Go DAC AWS	USM Go Advanced
The instrument	•	•	•	•
1 Battery	•	•	•	•
Battery charger	•	•	•	•
Power Cable	•	•	•	•
Transportation case	•	•	•	•
Brief Instruction Card	•	•	•	•
Operating Manual on CD	•	•	•	•
Manufacturer Certificate	•	•	•	•
Hand strap	•	•	•	•
AWS option		•	•	•
DAC / TCG Option			•	•
DGS Option				•
Phantom PRF Option				•
Square Wave Pulser Option				•

# Technical Specifications

LCD Display	
Active Area	W: 108 mm (4.25") x H: 64.8 mm (2.55")
Size	5.0"
Pixel Resolution	800 (W) x 480 (H) dot

Connectors	
Probe Connectors	Two LEMO-00
UT Output Connector	SAP output, Alarm
USB Interface	micro USB connector
SD-Card Connector	Full size SD card slot to accommodate standard SD cards

Pulser -	
All pulser measurements taken according to EN12668 specifications	
Pulser Mode	Simulated spike standard, Uni-polar square wave optional
Pulser Voltage (SQ Mode)	120 V to 300 V with 10 V step in a tolerance of 10%
Pulser Width (SQ Mode)	30 ns to 500 ns with 20 ns step in a tolerance of 10%
Pulser Amplitude (Spike Mode)	Low: 120 V, High: 300 V
Damping	50 or 1000 Ohms
PRF	Automatically optimized between 15 Hz to 2000 Hz, 3 automatic adjustment modes: AutoLow, Auto Med, AutoHigh - Optional manual control of PRF from 15 to 2000 Hz.

Receiver		
Range	14016 mm at steel longitudinal wave (557")	
Digital Gain	Dynamic range of 110 dB, with 0.2 dB step	
Analog Bandwidth	0.2 MHz - 20 MHz	
Filters	Broad Band	0.6 - 16
	1 MHz	0.5 - 2.3
	2 MHz (also 2.25)	0.6 - 3.8
	5 MHz (also 4)	2.3 - 7.9
	10 MHz	6.2 - 13.4
	13 MHz	10.8 - 17.3

Gate		
Independent Gates	2 gates (A and B), Gate B supports triggering by gate A	
Rectification	Positive (POS)	Full wave (FW)
	Negative (NEG)	RF
Measurement	Peak	
	Flank	

Memory	
Capacity	2 GB SD Card
Report	Jpeg reports

Environmental	
Battery	5.5 hours
	On board charging
	Off board charging with optional adaptor
	Proportional battery gauge indicating remaining operation time
Charger	"Universal" AC (100-240 V, 50-60 Hz)
	Meets CCC, CE, UL, CSA and PSE requirements
Size	175 mm x 111 mm x 50 mm
Weight	845 g (1.87 lb) with the battery
Languages	Russian, Portuguese, Italian, Polish, Czech, English, German, French, Spanish, Chinese and Japanese

Protection as per Mil-Std-810F		
Damp Heat & Humidity (Storage)	10 Cycles: 10 hrs at 60°C (140°F) down to 30°C (86°F), 10 hrs at 30°C (86°F) up to 60°C (140°F), transition within 2 hrs, 507.4	
Temperature Shock (Storage)	3 Cycles: 4 hrs at -20°C (-4°F) up to 60°C (140°F), 4 hrs at 60°C (140°F), transitions within 5 minutes, 503.4 Procedure II	
Vibration	514.5-5 Procedure I, Annex C, Figure 6, General exposure: 1 hr each axis	
Shock	6 cycles each axis, 15 g, 11 ms half sine, 516.5 Procedure I	
Loose Cargo (In Shipping Container)	514.5 Procedure II	
Transit Drop (Packaged for Shipment)	516.5 Procedure IV, 26 drops	
Operating Temperature Range	0°C to 55°C (32 to 131°F)	
Storage Temperature Range	-20°C to 60°C (-4 to 140 °F) with battery, 24 hrs	
Dust Proof/Dripping Water Proof	As per IEC 529 specification for IP67 classification	
Compliance	EMC/EMI	EN 55011 EN61000-6-2:2001
	Ultrasound	EN 12668 ASTM E1324 E317 ANSI/NCSL Z 540-1-1994 MIL STD 45662A MIL STD 2154

Options		
USM Go AWS Option	AWS sizing tool according to AWS D1.1 Structural welding code	
USM Go Dac Option	Dac sizing tool	EN 1712- EN 1713 - EN 1714
	16 points	ASME & ASME III
	Compliant with	JIS Z3060 compliant
	TCG: 120 dB dynamic	
	TCG: 110 dB/μs slope	
USM Go DGS Option	DGS sizing tool compliant with EN 1712	
USM Go Embedded Datalogger Option	Custom linear and grid file creation	
USM Go Squarewave Pulser Option	Allows pulser parameters fine tuning	
	Voltage adjustment from 120 V to 300V per 10 V steps	
	Pulse width adjustment from 30 ns to 500 ns per 10ns steps	
USM Go Manual PRF and Phantom Option	Allows Manual PRF optimization between 15 Hz and 2000 Hz per step of 5 Hz. Phantom PRF will help to identify ghost echo due to multiple reflections in low materials	



[www.gesensinginspection.com](http://www.gesensinginspection.com)

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