# USM 35X


The latest version of the USM 35 portable ultrasonic flaw detector from GE's Inspection Technologies business, is now totally protected against the ingress of dust and high pressure jets of water to IP 66 and contains new software which allows its operation to Japanese weld inspection
standards.

{tab=Features}

- Protection accorind to IP66
- Can be operated in harsh or industrial environments
- Fast and bright color LCD
- Rechargeable battery with ability to operate for 14 hours
- Max allowable operating temperature range from 0°C to 50°C
- Optional DGS module for single element or dual element (T/R) probes. The module includes some preset GE's single or dual probes. Other probes can be configured by the user.

- *true* DGS® angle beam transducers for significantly improved sizing capabilities to EN 583-2

{tab=Specifications} **Calibration ranges**

**Min** 0 to 0.5 mm +10 % (steel), 0 to 0.02” +10 % (steel)
**Max** 0 to 9,999 mm +10 % (steel), 0 to 390” +10 % (steel) within the frequency range from 0.2 to 1 M
**Sound velocity** 1,000 to 15,000 m/s, 40 to 600 inch/ms variable in steps of 1 m/s, 0.1 inch/ms and fixed progran
**Display delay** 0 to 1,000 mm, -0.3 to 40” (340 µs)
**Probe delay** 0 to 200 µs
**Auto calibration** Measurement and setting of sound velocity and probe delay using two known calibration echoes
**Pulse energy** 22 pF, 1 nF
**Damping** 50 ohms, 500 ohms (1,000 ohms in TR mode)
**Pulse repetition frequency** 4 to 1,000 Hz, variable in 10 steps
**Frequency ranges (-3 dB)** 0.2 to 1 MHz / 0.4 to 4 MHz / 0.8 to 8 MHz / 2 to 20 MHz
**Gain** 0 to 110 dB, variable in steps
**Gain steps** 0.5 / 1 / 2 / 6 / 12 dB (or user-adjustable), step 0 is locked
**Fine gain** 1 dB, continuously variable in 40 steps

**Rectification** Full wave, negative and positive half-wave, RF mode
**Reject** Linear, 0 to 80 % screen height Variable in steps of 1 %
**Monitor gates** 2 independent gates in color bar mode, start and width variable over the entire calibration range
**Sound path measurement** Digital display of sound path (projection distance, depth) between initial pulse and the first echo
**Measurement resolution** 0.01 mm within a range up to 99.99 mm/ 0.1 mm within a range from 100 to 999.9 mm/ 1 mm ab
**Amplitude display** In % screen height
USM 35X DAC: additionally in dB above DAC or TCG
USM 35X S: additionally in dB above DGS curve or ERS
**Displayed readings** Sound path, (reduced) projection distance, depth, amplitude for every gate, userconfigurable at
**A-scan functions** Manual or automatic A-scan freeze, A-scan comparison, echo dynamics (envelope), peak echo
**Color functions** Parameter color-coded display of legs in angle testing, adaptation of background color to the light
**DAC / TCG (Option)** USM 35X DAC and USM 35X S: Distance- Amplitude Curves (DAC) or TCG line (TCG) wit
**DGS (Option)** USM 35X S: DGS curves for single-element and dual-element probes (B1S, B2S, B4S, ME
**Display size / resolution** 1/4 VGA, 4.6" x 3.4" (W x H)
320 x 240 pixels
**A-scan size / resolution** 1.6" x 0.8", 4.6” x 3.2”
320 x 220 pixels (zoom)
**Units of measurement** mm or inch
**Data memory** 800 instrument setups or reports, including AScans can be stored, recalled, printed or exported
**Direct documentation** Display contents, report including A-scan, reading, function list (parameter dump)
**Printer driver** HP DeskJet, HP LaserJet, HP DJ 1200 (DeskJet),HP LJ 1012 (LaserJet), EPSON FX/LX, SEIK
**RS 232 interface** 32 pin D-SUB, bi-directional, 300 - 57,600 baud An USB adapator cable can be provided to conne
**Input/Output** 8 way Lemo-1 socket (trigger output, gate alarm, test data release)
Additional analog output for amplitude or sound path in selected gate
**VGA output** 10 way Lemo-1 socket for the connection of an external display screen or beamer
**Probe connections** 2 connections BNC
**Dialog languages** German, English, French, Italian, Portuguese, Spanish, Danish, Swedish, Norwegian, Finnish, C
**Battery operation** Li-ion battery or 6 C-cells (NiCad, NiMH or AlMn), operating time: 14 hours with Li-ion battery (6
**Power pack/ battery charger** Wide range power supply (85 to 265 VAC);
Operating voltage: 6 to 12 VDC
Current consumption: max. 9 W, depending on the setting
**Weight** 2.2 kg, 4.9 lbs., including batteries
**Size** 177 mm x 255 mm x 100 mm, 7.0" x 10" x 3.9" (H x W x D)
**Environmental** Protection class: IP 66 Shock proof acc. to DIN IEC 68: 6 ms, 60 g, 3 shocks per orientation Vib
to DIN IEC 68: 0 - 150 Hz, 2 g, 20 cycles per orientation
Operating temperature: 0° to 60°C; 32° to 140°F (-10°C; 14°F on special request)
Storage temperature: -20° to 60°C; 4° to 140°F

**Data Logger Option**

**Memory capacity** 5,000 readings, 500 A-scans for the readings, 100 jobs, 10 comment texts per job
**Storable readings** Sound path and sound path differences of all gates, amplitudes (% SH, dB-to-threshold, dBto-
**Lines** Number of lines: maximum 5,000 (Linear file with one column), numerical indexing Number of c
**Tolerance monitor** Lower and upper acceptance level with monitor function
**Minimum reading capture** Storage of the minimum value measured in continuous scanning, display of the value 3 seconds
**Monitor gate** 1 additional independent gate in color bar mode
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