

Krautkramer USN 58R

Ultrasonic Flaw Detector

Base Instrument Package

USN 58R Portable Ultrasonic Flaw Detector with “Hi-Brite” EL Display

Li-437 Lithium Ion “on-board” re-chargeable battery pack

LiBC-419 Lithium Ion Battery Charger/AC power supply

LCD-139 Clear, field replaceable LCD Screen Overlays (pkg. 10)

OP-260 Operating Manual
Certificate of Conformity
Laminated Menu Structure Card
Firmware Upgrade CD-rom (requires PCCBL-841)

Accessories

SCC-071 Soft Carry Case with padded adjustable shoulder strap

SAP-112 Soft Accessory Pouch, detachable, for use with soft carry case

UDFW UltraDOC 4 Windows™ Documentation Software

PCCBL-841 9 pin Serial PC Cable

PRTCBL-518 Serial Printer Cable

PRTCBL-842 Parallel Printer Interface Cable

I/O-398 Real Time I/O Cable (DB15 termination at instrument only)

EAA-008 External Audible Alarm

MS – 464 Master/Slave Interconnect Cable

REM-514 Remote Copy Hand Switch

FS-951 Remote Copy Foot Switch

LCC-315 Heavy-Duty, Lockable Transport Case

Specifications

Range

0.040” to 480” (1 to 12,192 mm) at steel velocity; range selectable in fixed steps or continuously variable

Material Velocity

Continuously adjustable from .0394 to .6299 inches/microsecond (1,000 to 16,000 m/second); 65 selectable material velocities

Display Delay

-20 to 3498 microseconds in steel (dependent on range)

Probe Delay/Zero Offset

0 to 999.9 microseconds

Gain

0 to 110 dB adjustable in selectable steps 0.1, 0.5, 1.0, 2.0, 6.0, user definable, and locked

Test Modes

Pulse echo, dual, and thru-transmission

Pulser

Spike/excitation pulse

Pulse Repetition Frequency

Autolow, autohigh, manually adjustable from 15 to 2000 Hz in 5 Hz increments, external trigger

Pulser Energy

Low, high

Damping

50, 75, 150, 1000 ohms

Bandwidth (amplifier bandpass)

0.25 to 25 MHz with 10 selectable settings including broadband

Gate Monitors

Two independent flaw gates controllable over entire sweep range

Measurement Modes

Zero-to-first, multi-echo with selectable flank or peak detection

Rectification

Positive halfwave, negative halfwave, fullwave, RF

Reject (suppression)

0 to 80% linear

Units

Inch, millimeter, or microsecond selectable

Operating Temperature

-20 to 55° C (-4 to 130° F); -40 to 105° C (-40 to 221° F) storable

Languages

Selectable English, German, French, Spanish, Italian, Portuguese, Dutch, Finnish, Norwegian, Swedish, Danish, Romanian, Czech, Slovakian

Probe Connectors

BNC or Lemo selectable at order

Keypad

International symbols

Battery Power

Lithium Ion Battery Pack; 6 D-size NiMH (9.0 Ah); NiCad or alkaline cells substitutable

Battery Life

8 hours on Li-Ion battery pack

Size

11.1” W x 5.9” H x 6.25”D (282 x 150 x 159 mm)

Weight

6.4 lbs. (2.9 kg) Li-Ion battery; 3.3 lbs. (1.5 kg) without battery

Warranty

2 year conditional warranty on parts and labor; free 2nd year contingent upon return of unit within 13 months of purchase for recertification

Weld Rating Calculation

Simplifies the rating of weld indications according to AWS specification D1.1 (formula $D=A-B-C$)

GE imagination at work



Outputs

TTL Go/NoGo

Three independently assignable outputs; instantaneous, timed, latched with visual LED and audible horn alarms

Analog

Four independently assignable outputs

Amplitude 0 to 100% full screen ht. directly corresponds to 0 to 2.5V to 100% full screen ht. directly correspond to 0 to 2.5V

Thickness (TOF)

0V corresponds to the value on the left side of the screen or display delay; 2.5V corresponds to the value on the right side of the screen or range

I/O Port

Bi-directional RS232, baud rate selectable up to 115, 200, direct reports to printers (including HP DeskJet & LaserJet parallel printers)

EL Display

Display

4.5" X 3.4" (86 x 115 mm), 320 x 240 pixels, 1/4VGA, brightness control, reverse video mode

A-scan Size

220 x 200 pixels in normal mode, 220 x 100 in ½ screen mode, 320 x 200 in zoom mode

A-scan Update Rate

60 Hz, single shot

A-scan Waveform Selections

Hollow, filled, smart hollow, smart filled

A-scan Enhance Mode

Baseline break

Dedicated Key Function

Test

Displays the test menu, coarse range markers, then display delay & range under the A-scan upon successive key presses

Home (2)

Returns instrument to main menu

Question Mark

Displays help text for the four active parameters along right side of display

Freeze

Freezes the displayed A-scan image according to the setting for the freeze mode in the configuration menu (all, peak std., compare, (envelope peak).

Copy

Sends information to the on-board datalogger or I/O port

Zoom

Expands A-Scan display area for increased screen resolution

dB Step

Selects gain increments

Magnify

Expands area within selected gate for increased A-Scan resolution

Data Storage & Documentation

Memory

Minimum 225 datasets store all instrument operating parameters plus A-scan; stored datasets can be easily previewed and recalled for quick, repeatable instrument setup

Memory Retention

2 years

Alphanumeric Thickness Datalogger

Up to 99,999 thickness readings with up to 6 (16-character) user defined Notes per reading can be stored in three flexible, powerful file structures. 14-character file names with easy file navigation and viewing of both the A-Scan and thickness data provided by ½ screen testing mode. Thickness readings can be stored, viewed, cleared, or output directly to a printer.

Thickness File Structures

Linear (sequential), Grid (702 x 702), Custom-Linear with auto label capability

Alphanumeric Input

Quick & easy using two rotary knobs

Inspection Memo, Notes, Header

User definable memo (up to 252 characters), header (nine 16-character lines), & 6 (16-character) thickness reading notes to further document inspection conditions on a per file basis

File Preview

Scroll to preview stored A-scan & file header fields to easily select the proper file for recall

Options

DAC/TCG Option

Multiple Curve DAC (Distance Amplitude Curve)/TCG (Time Corrected Gain) for echo amplitude adjustment and evaluation, 40 dB dynamic range, 12 dB/ microsecond slope, record up to 16 points, recorded points are individually editable, new points can be inserted. Display four additional curves based upon dB offset feature from originally recorded DAC curve. TCG attenuation and transfer correction features enable use on other materials and surface conditions.

IF (Interface) Gate Option

For automatic start of the display, Gates A or B, and/or DAC/TCG for immersion testing applications where the water to top surface of the part varies

Backwall Echo Attenuator Option

Allows independent gain control of the region under Gate B for backwall echo monitoring

DGS Option

Displays a curve for a particular gain of an equivalent reflector size as a function of the distance between the probe and the reflector for 25 selectable narrow-banded probes

RF Output Option

Outputs the raw RF waveform via a standard Lemo#00 connector for further analysis

High Speed Digital Output Option

Outputs amplitude or thickness values 20 times faster than RS232 port