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TRX CONSTRUCTION EQUIPMENT F.Z.E.

Phased Array Ultrasound Probe Catalog

www.trxmde.com

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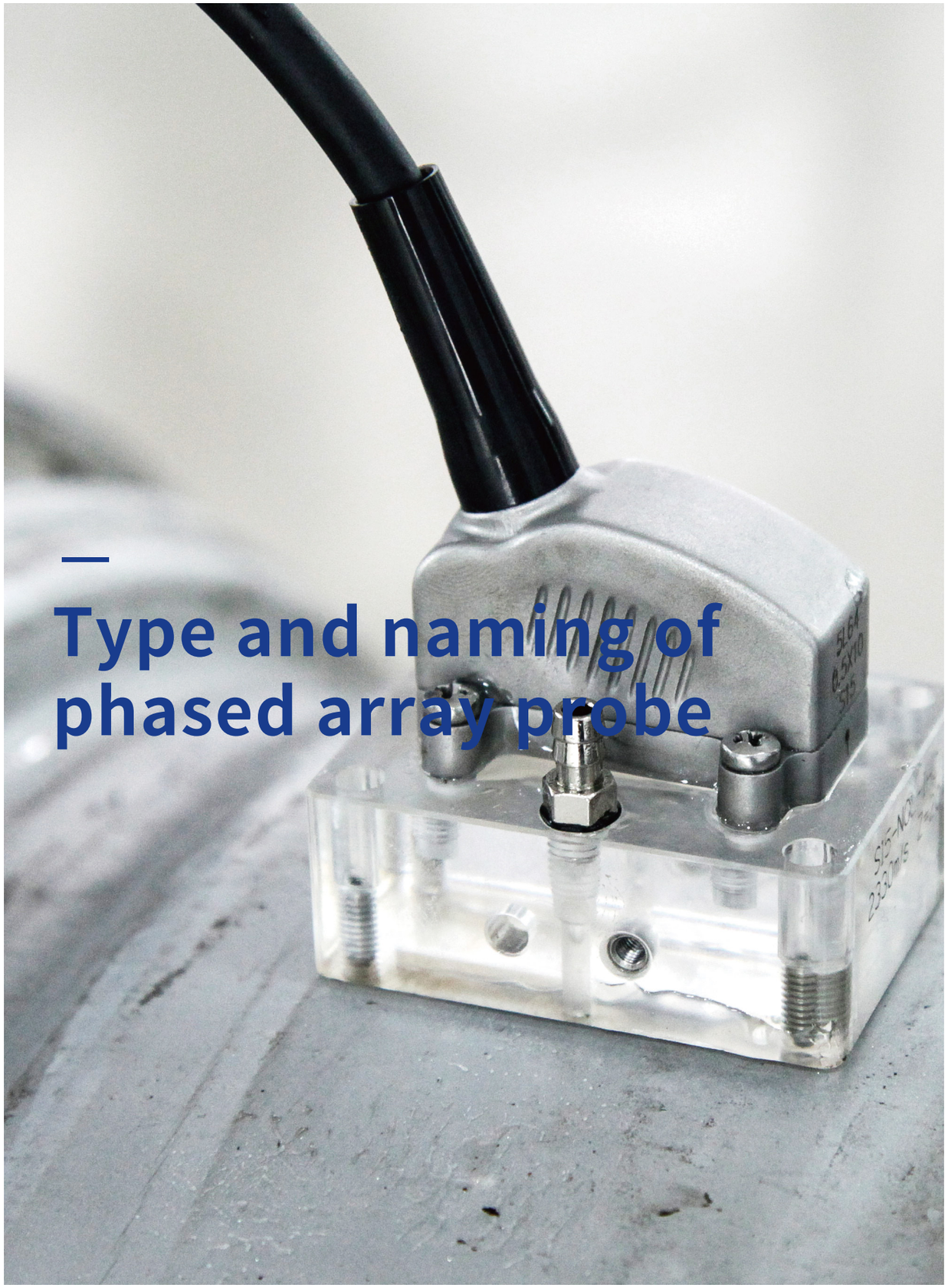
About M2

M2 Electronics(Shanghai) Co., Ltd. (EINTIK) is a high-tech company specializing in designing and manufacturing ultrasound probes. We provide leading-edge ultrasound probes, PAUT (phased-array ultrasound) probes, TOFD probes, medical imaging probes, and customized probes.

M2 Technology encourages innovation and intellectual property protection. We aim to be competitive by possessing proprietary technologies, including core technology in gradient acoustic matching layer, 1-3 piezo-electric monocrystal composite, two-dimen-sional array probe encapsulation technology, etc. We strictly follow ISO9001:2015 Quality Management System.

We take pride in providing ward-winning products and customer service. Every day, thousands of inspectors around the world are benefiting from Eintik. Together we hope to build the best probes around the globe.

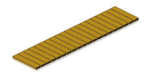


Type and naming of phased array probe

Type of phased array probes

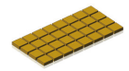
Type

Standard phased array products can be divided into the following categories, frequency between 1-20Mhz, the number of array elements between 10 and 256. Aintic can provide a wide variety of phased array probes to facilitate the completion of weld, pipe, casting, conforming materials and other applications. At the same time, I can not customize the special phased array probe according to customers' needs. Please refer to the manual for more details.

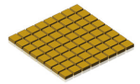


Linear (L)

Elevation Focused (EF)

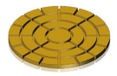


1.5D Matrix (M)



2D Matrix (M)

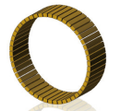
Annular (A)



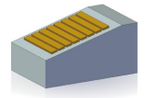
Rho-theta Array (RT)

Daisy Array(DA)

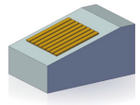
Cone array (CA)



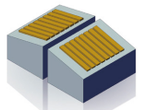
Circular Array(CC)



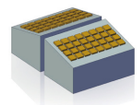
Variable angle (VL)



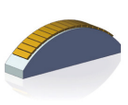
Skew (SL)



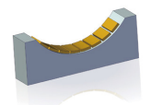
Dual linear(DL)



Dual 1.5D(DM)



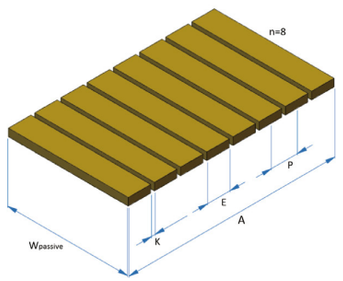
Convex (V)



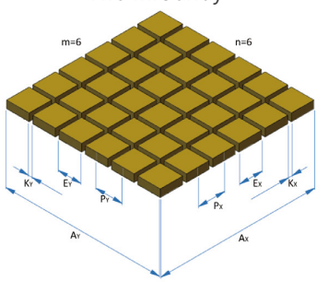
Concave (C)

Parameters

One line face array



Two wire array



- Chip spindle line (spindle) : The line between the center points of each array of a one-dimensional array probe
- Secondary axis of the wafer (secondary axis) : The axis perpendicular to the main axis
- Number of elements (principal axis /n) : indicates the number of elements along the principal axis
- Number of elements (sub-axis direction /m) : The number of elements along the sub-axis direction
- Spindle chip spacing (Px) : The spacing between adjacent array centers along the spindle line
- Secondary axis chip spacing (Py) : Spacing between adjacent array centers along the secondary axis (for array probes)
- Spindle Activation Aperture (Ax) : The total length of the wafer activated by the transducer along the spindle direction. Ax is equal to n minus 1 times Px plus Ex
- Secondary axis active aperture (Wpassive/Ay) : Total length of transducer activated wafer along the secondary axis Ay= (m-1).Py+Ey

Probe&Wedge naming rules

Probe

5 L 64 -0.6 X 10-M12-F 2.5- D3

Array type
- L The line array
- EF Self focusing line array
- M Array
- A Face ring array
- V Convex array
- C Concave array
- CC Whole circle array

Spacing of elements
- 0.6 0.6mm

Type of probe
- M External wedge probe
- A Internal integrated wedge probe
- C Water immersion or water wedge probe
- X Flexible array probe

Length of cable
- 2.5 2.5m

Frequency of center
- 1.5 1.5MHz
- 2.25 2.25MHz
- 3 3MHz
- 5 5MHz
- 7 7.5MHz
- 10 10MHz
- 15 15MHz
- 20 20MHz

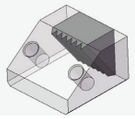
Number of elements
- 64 64 Array

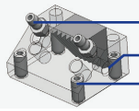
Secondary axis length of wafer
- 10 10mm

Cable skin material
- F PU low smoke and no halogen
- P pvc
- M With metal woven mesh sheath
- PA With nylon woven mesh sheath
- HT High temperature resistant 160° cable

Connector
- D3 Match the OminiScan instrument
- D19 Match the Phasor instrument
- D5 CONNEC 78PIN connector
- D6 Hypetionics 160PIN
- D7 Match Topaz/Zircon instrument
- D8 ITTCANNON 969IN

Wedge





- I: coupling agent injection port
- H: The clamping hole of the scanning frame
- C: Tungsten carbide anti-wear screw

M12 - N 55 S - IHC - AOD 80

Probe fixing mode
- N general
- L rotated 90 degrees relative to normal
- DN double array, conventional fixed

Angle of refraction in standard steel
- 0 0°
- 55 55°
- 70 70°

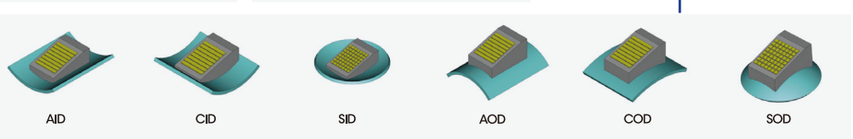
Optional
- IH with water injection port, scanning frame clamping hole
- IHS with water injection port, sweep frame clamping hole, with stainless steel jacket
- HS with water injection port, scanning frame holding hole, with anti-wear screw

Diameter of surface
- 80 80mm

Probe housing Type
- S external wedge probe
- A internal integrated wedge probe
- C Water immersion or water wedge probe
- X flexible array probe

Class of refracted waveforms in steel
- S-wave (3230m/s)
- L longitudinal wave (5920m/s)

Workpiece detection surface shape
- AOD Axial outside diameter
- COD Circumferential outside



Custom probe

Customized

The phased array probe wedges can be customized according to the requirements of customers, which can be used to meet the needs of customers to complete specific applications or special workpiece detection. To this end, when designing and manufacturing custom probes, we need to understand the following information:

- → application
- → Conventional ultrasonic probe with comparability
- → Probe center frequency
- → The number of arrays, the spacing between arrays, and the length of the sub-axis direction of the wafer
- → Shape of transducer array
- → Is the array elevation focused?
- → Shell type (S series, A series, others)
- → Case size restrictions, case shape requirements
- → Cable skin material (PVC,PU, etc.)
- → Cable with jacket material
- → Length of cable
- → Connector Type

For more information, please visit our website: www.eintik.com

Phased array probe

Minimal case series

Extra Small Series

Small contact probe: Very small shape, widely used in aviation, or some small parts.

Model

M00

M0

Features

Advantage Features:

- Compact (8x8x23mm), easy to detect small areas
- Customize the lead mode of the line
- Small underside contact, can be equipped with small wedge
- High sensitivity consistency, good signal-to-noise ratio, detection and quantization of defects

Applications:

- Aerospace: Aircraft scratches, wheels, hubs, etc
- Petrochemical industry: special petroleum pipeline, bottle, tank
- Medical: small surgical instruments, precision electronic instruments
- Automobile: Axle, hub, brake disc
- Power: small pressure vessel and pipeline, turbine blade, rotor monitoring

Model Select

Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
M00	5L16-0.31x5	5	16	0.31	5.0	5.0
	7.5L16-0.31x5	7.5	16	0.31	5.0	5.0
	10L16-0.31x5	10	16	0.31	5.0	5.0
M0	2.25L10-0.6x6	2.25	10	0.60	6.0	6.0
	5L10-0.6x6	5	10	0.60	6.0	6.0
	7.5L10-0.6x6	7.5	10	0.60	6.0	6.0
	10L10-0.6x6	10	10	0.60	6.0	6.0

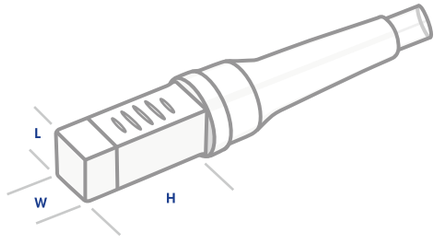
Minimal case series

Wedge Select

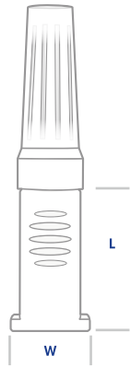
Type of probe	Type of wedge	Refraction in standard steel	Scanning Angle is recommended
M00	N0L-5MM	0°p-wave	-30°～ 30°
	N0L-20MM	0°p-wave	-30°～ 30°
	N45L	45°p-wave	40°～ 70°
	N60L	60°p-wave	40°～ 70°
	N45S	45°shear wave	40°～ 70°
	N60S	60°shear wave	40°～ 70°
	N60S-IHC	60°shear wave	40°～ 70°
	N60S-IHC-AOD100	60°shear wave	40°～ 70°
M0	N0L	0°p-wave	-30°～ 30°
	N45L	45°p-wave	40°～ 70°
	N45S	45°shear wave	40°～ 70°
	N60S	60°shear wave	40°～ 70°
	N60S-IHC	60°shear wave	40°～ 70°
	N60S-AOD100	60°shear wave	40°～ 70°
	N60S-IHC-AOD100	60°shear wave	40°～ 70°

Size

M00 LxWxH : 8x8x23(mm)
LxWxH : 0.31x0.31x0.91(in)



M0 LxWxH : 13x10x23(mm)
LxWxH : 0.51x0.39x0.91(in)



Small shell series

Small Series

Line array weld probe: small size, suitable for space restricted area detection, and all kinds of parts.

Model

M10

S5 Model:

- Small size, easy to detect small areas
- Custom line leads with excellent signal-to-noise ratio
- Inspect castings, forgings, pipes, pipe fittings and various machining and structural parts
- The thick welds from 6.35mm to 38mm were tested

M31

S114 Model:

- For carbon steel weld detection, 3mm to 60mm thick weld manual or automatic detection
- Broad thickness measurement, unique wedge design
- Excellent signal to noise ratio
- The welding position of straight pipe and pipe fitting can be evaluated

Applications

Aerospace: Aircraft scratches, rotors, hubs, etc

Petrochemical industry: special petroleum pipeline, bottle, tank

Automobile: Axle, hub, brake disc

Power: small pressure vessel and pipeline, turbine blade, rotor test

Model Select

Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
M10	2.25L8-1.2x10	2.25	8	1.20	9.6	10.0
	2.25L16-0.6x10	2.25	16	0.60	9.6	10.0
	2.25L32-0.3x10	2.25	32	0.30	9.6	10.0
	3.5L16-0.6x10	3.5	16	0.60	9.6	10.0
	4L16-0.6x10	4	16	0.60	9.6	10.0
	4L32-0.3x10	4	32	0.30	9.6	10.0
	5L16-0.6x10	5	16	0.60	9.6	10.0
	7.5L16-0.6x10	7.5	16	0.60	9.6	10.0
	7.5L32-0.3x10	7.5	32	0.30	9.6	10.0
	10L16-0.6x10	10	16	0.60	9.6	10.0
	10L32-0.31x7	10	32	0.31	9.9	7.0

Small shell series

Model Select

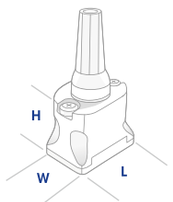
Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
M31	2.25L32-0.6x10	2.25	32	0.60	19.2	10.0
	5L32-0.6x10	5	32	0.60	19.2	10.0
	7.5L32-0.6x10	7.5	32	0.60	19.2	10.0
	10L32-0.6x10-S14	10	32	0.60	19.2	10.0
	10L64-0.3x10-S14	10	64	0.60	19.2	10.0

Wedge

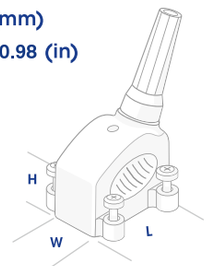
Type of probe	Type of wedge	Refraction in standard steel	Scanning Angle is recommended
M10	N0L	0°p-wave	-30°～ 30°
	N45L	45°p-wave	40°～ 70°
	N55L	55°p-wave	40°～ 70°
	N60L	60°p-wave	40°～ 70°
	N45S	45°shear wave	40°～ 70°
	N55S	45°shear wave	40°～ 70°
	N70S	70°shear wave	40°～ 70°
	N60S-IHC	60°shear wave	40°～ 70°
	N60S-AOD215	60°shear wave	40°～ 70°
	N60S-IHC-AOD215	60°shear wave	40°～ 70°
M31	N0L	0°p-wave	-30°～ 30°
	N60L	60°p-wave	40°～ 70°
	N55S	55°shear wave	40°～ 70°
	N55S-IHC	55°shear wave	40°～ 70°
	N55S-AOD112	55°shear wave	40°～ 70°
	N55S-IHC-AOD112	55°shear wave	40°～ 70°

Size

M10 LxWxH : 22.5x15.5x20 (mm)
LxWxH : 0.89x0.61x0.79 (in)



M31 LxWxH : 30x16x25 (mm)
LxWxH : 1.18x0.63x0.98 (in)



Medium shell series

Medium Series

Classical linear array phased array probe: the size is moderate, the traditional phased array probe, widely used.

Model

M12

M12 Universal:

- Electronically control beam Angle, focus and scan path
- Fixed Angle with focusing probe
- Replaceable wedge and delay block
- Weld raw materials and other inspection
- Moderate physique, large monitoring range

M32

M32 carbon steel weld series:

- 3mm-60mm thick weld inspection
- Perform manual or automatic detection
- Broad thickness measurement
- Excellent signal-to-noise ratio
- Moderate physique, large monitoring range

M3

M5

M3 and M5 weld deep penetration series:

- Acoustically, can match with Rexolite, can complete most Angle beam applications
- Thick flat materials and weld forgings, noisy or granular materials
- Moderate physique, large monitoring range

Medium shell series

Applications

Aerospace: Aircraft scratches, rotors, hubs, etc
Petrochemical industry: special petroleum pipeline, bottle, tank
Automobile: Axle, hub, brake disc
Power: small pressure vessels and pipelines, turbine blades,Detection of rotor

Model Select

Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
M12	2.25L64-0.6x10	2.25	64	0.60	38.4	10.0
	3.5L64-0.6x10	3.5	64	0.60	38.4	10.0
	5L64-0.6x10	5	64	0.60	38.4	10.0
	7.5L64-0.6x10	7.5	64	0.60	38.4	10.0
	10L64-0.6x7	10	64	0.60	38.4	7.0
M32	2.25L32-1.0x10	2.25	32	1.0	32.0	10.0
	2.25L64-0.5x10	2.25	64	0.50	32.0	10.0
	5L32-1.0x10	5	32	1.0	32.0	10.0
	5L64-0.5x10	5	64	0.50	32.0	10.0
	7.5L32-1.0x10	7.5	32	1.0	32.0	10.0
	10L64-0.5x10	10	64	0.50	32.0	10.0
M3	3.5L16-1.6x16	3.5	16	1.60	25.6	16.0
	5L16-1.2x16	5	16	1.20	19.2	16.0
	5L16-1.6x16	5	16	1.60	25.6	16.0
M5	1.5L32-0.75x24	1.5	32	0.75	24.0	24.0
	2.25L16-1.5x24	2.25	16	1.50	24.0	24.0
	2.25L32-0.75x24	2.25	32	0.75	24.0	24.0
	5L16-1.5x24	5	16	1.50	24.0	24.0
	5L16-1.2x20	5	16	1.20	19.2	20.0
	5L32-0.6x20	5	32	0.60	19.2	20.0

Medium shell series

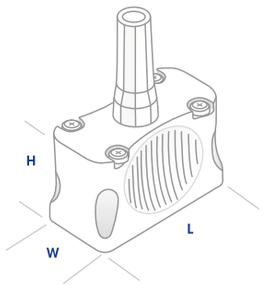
Model Select

Type of probe	Type of wedge	Refraction in standard steel	Scanning Angle is recommended
M12	N0L	0°p-wave	-30°～ 30°
	N40L	40°p-wave	40°～ 70°
	N60L	60°p-wave	40°～ 70°
	N75L	75°p-wave	40°～ 80°
	N55S	55°shear wave	40°～ 70°
M32	N0L	0°shear wave	-30°～ 30°
	N60L	60°shear wave	40°～ 70°
	N55S	55°shear wave	40°～ 70°
	N55S-IHC	55°shear wave	40°～ 70°
	N55S-AOD500	55°shear wave	40°～ 70°
	N55S-IHC-AOD500	55°p-wave	40°～ 70°
M3	N0L	0°p-wave	-30°～ 30°
	N30L	30°shear wave	-30°～ 30°
	N45L	45°shear wave	40°～ 70°
	N60L	60°shear wave	40°～ 70°
	N45S	45°shear wave	40°～ 70°
	N55S	55°shear wave	40°～ 70°
	N60S-IHC	60°shear wave	40°～ 70°
	N60S-AOD100	60°shear wave	40°～ 70°
	N60S-IHC-AOD100	60°shear wave	40°～ 70°
M5	N0L	0°shear wave	-30°～ 30°
	N45L	45°p-wave	40°～ 70°
	N60L	60°p-wave	40°～ 70°
	N45S	45°shear wave	40°～ 70°
	N55S	55°shear wave	40°～ 70°
	N60S	60°shear wave	40°～ 70°
	N60S-IHC	60°shear wave	40°～ 70°
	N60S-AOD100	60°shear wave	40°～ 70°
	N60S-IHC-AOD100	60°shear wave	40°～ 70°

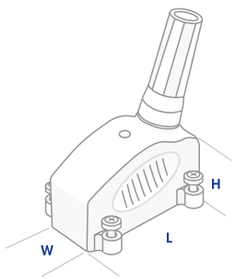
Medium shell series

Size

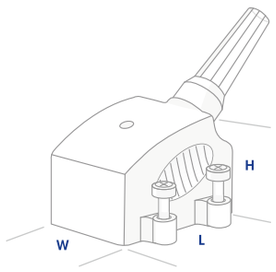
M12 LxWxH : 44.5x22.5x28 (mm)
LxWxH : 1.75x0.88x1.1 (in)



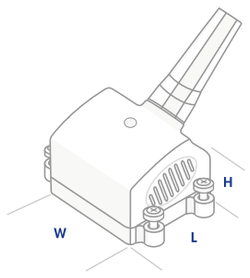
M32 LxWxH : 40x16x25 (mm)
LxWxH : 1.57x0.63x0.98 (in)



M3 LxWxH : 36x22x25 (mm)
LxWxH : 1.42x0.87x0.98 (in)



M5 LxWxH : 29x31x25 (mm)
LxWxH : 1.14x1.22x0.98 (in)



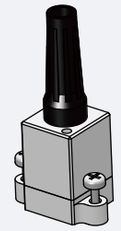
Large shell series

Large Series

Pipeline and thick weld probe: large volume, large measuring range, for the completion of oil, gas, electricity and other related pipeline detection.

Model

M1



M16

M14

M4

Advantages and Characteristics:

- The combination of S19 and S20 can automatically detect girth welds
- Suitable for manual or automatic inspection of pipeline welds
- The S20 can be self-focused or side-focused to optimize the signal-to-noise ratio for specific depths
- In the application of small pipe fittings/thin wall samples, the sound beam energy is better
- Acoustically, can match with Rexolite, can complete most Angle beam
- Can detect thick flat materials and welds, forgings, loud noise or granular materials

Applications:

Petrochemical industry: special petroleum pipeline, bottle, tank

Routine: Inspection and quantification of defects in welds, boilers, fittings and process fittings

Other: conventional weld detection pipeline circumferential weld, tank, conventional weld detection

Large shell series

Model Select

Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
M1	2.25L60-1.0x10	2.25	60	1.0	60.0	10.0
	4L60-1.0x10	4	60	1.0	60.0	10.0
	5L60-0.6x10	5	60	1.0	60.0	10.0
	7.5L60-1.0x10	7.5	60	1.0	60.0	10.0
	10L120-0.5x10	10	120	0.50	60.0	10.0
M16	1.5EF60-1.0x18*	1.5	60	1.0	60.0	18.0
	2.25EF60-1.0x18*	2.25	60	1.0	60.0	18.0
	3.5EF60-1.0x18*	3.5	60	1.0	60.0	18.0
	5EF60-1.0x18*	5	60	1.0	60.0	18.0
	7.5EF60-1.0x18*	7.5	60	1.0	60.0	18.0
M14	2.25L60-1.0x10	2.25	60	1.0	60.0	10.0
	3.5L60-1.0x10	3.5	60	1.0	60.0	10.0
	5L60-1.0x10	5	60	1.0	60.0	10.0
	7.5L60-1.0x10	7.5	60	1.0	60.0	10.0
	10L60-1.0x10	10	60	1.0	60.0	10.0
M4	0.5L16-2.8x26	0.5	16	2.80	44.8	26.0
	1.5L16-2.8x26	1.5	16	2.80	44.8	26.0
	2.25L16-2x20	2.25	16	2.0	32.0	20.0
	3.5L16-2.8x26	3.5	16	2.80	38.4	26.0

Wedge Select

Type of probe	Type of wedge	Refraction in standard steel	Scanning Angle is recommended
M4	N0L	0°横波	-30°～ 30°
	N45L	45°纵波	40°～ 70°
	N60L	60°纵波	40°～ 70°
	N45S	45°横波	40°～ 70°
	N55S	55°横波	40°～ 70°
	N60S	60°横波	40°～ 70°
	N60S-IHC	60°横波	40°～ 70°
	N60S-AOD100	60°横波	40°～ 70°
	N60S-IHC-AOD100	60°横波	40°～ 70°

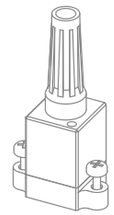
Large shell series

Wedge Select

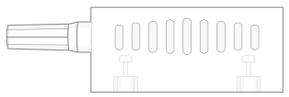
Type of probe	Type of wedge	Refraction in standard steel	Scanning Angle is recommended
M1	N0L	0°p-wave	-30°～ 30°
	N45L	40°p-wave	40°～ 70°
	N55L	55°p-wave	40°～ 70°
	N60L	60°p-wave	40°～ 70°
	N45S	45°shear wave	40°～ 70°
	N55S	55°shear wave	40°～ 70°
	N60S	60°shear wave	40°～ 70°
	N70S	70°shear wave	40°～ 70°
	N60S-IHC	60°shear wave	40°～ 70°
	N60S-AOD100	60°shear wave	40°～ 70°
	N60S-IHC-AOD100	60°shear wave	40°～ 70°
M16	N0L	0°p-wave	-30°～ 30°
	N55S	55°p-wave	40°～ 70°
	N60L	60°shear wave	40°～ 70°

Size

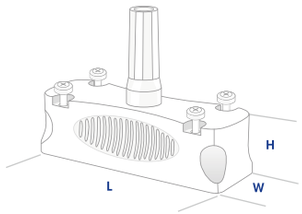
M1 LxWxH : 70x16x30 (mm)
LxWxH : 2.76x0.63x1.18 (in)



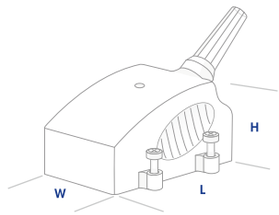
M14 LxWxH : 68x21x30 (mm)
LxWxH : 2.68x0.83x1.18 (in)



M16 LxWxH : 68x23x20 (mm)
LxWxH : 2.68x0.91x0.79 (in)



M4 LxWxH : 57x34x40 (mm)
LxWxH : 2.24x1.34x1.57 (in)



Water flooding series

Immersion Series

Water immersion series: can be used with the water wedge, the detection object into the water for detection.

Model

MI1

MI2

MI3

Features

Features of MI1, MI2 and MI3:

- Water matched acoustic resistance, suitable for geometrically complex shape of the workpiece flaw detection.
- The probe is designed to be fitted to a water wedge, allowing it to be more easily coupled to a variety of surfaces, and has a adjustable water medium sound path.
- A single scan of a linear scan can cover a distance of 30mm-90mm.
- Extremely high accuracy.
- Normal operation up to 24 hours under one meter of water.

Application:

To inspect sheet or pipe fittings (of steel, aluminum, or other materials).

Defects such as delamination and debonding were detected by testing the composites.

It can scan large area of the detected object and measure thickness online.

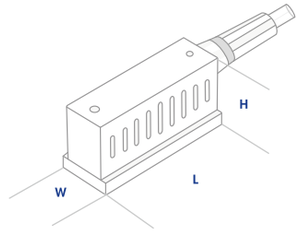
Water flooding series

Model Select

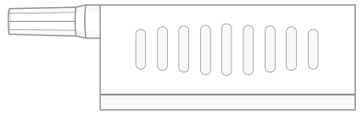
Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
MI1	5L64-0.6x10	5	64	0.6	38.4	10.0
	7.5L128-0.6x10	7.5	128	0.6	38.4	10.0
	10L64-0.6x7	10	64	0.6	32.0	7.0
	15L64-0.5x7	15	64	0.5	32.0	7.0
MI2	2.25L64-1.0x10	2.25	64	1.0	64.0	10.0
	3.5L128-0.6x10	3.5	128	0.6	76.8	10.0
	5L128-0.6x10	5	128	0.6	76.8	10.0
	7.5L128-0.6x10	7.5	128	0.6	76.8	10.0
	10L128-0.5x7	10	128	0.5	64.0	7.0
MI3	1L64-1.5x12	1	64	1.5	96.0	12.0
	2.25L128-0.75x12	2.25	128	0.75	96.0	12.0
	3.5L128-0.75x10	3.5	128	0.75	96.0	10.0
	5L128-0.75x10	5	128	0.75	96.0	10.0
	7.5L128-0.75x10	7.5	128	0.75	96.0	10.0

Size

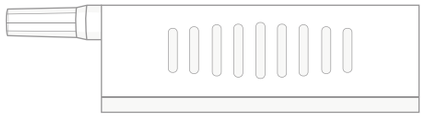
MI1 LxWxH : 50x19x30 (mm)
LxWxH : 1.97x0.75x1.18 (in)



MI2 LxWxH : 83x21x35 (mm)
LxWxH : 3.27x0.83x1.38 (in)



MI3 LxWxH : 102x21x35(mm)
LxWxH : 4.01x0.83x1.38(in)



Narrow shell series

Narrow Side Series — Near-wall narrow casing probe: With a smaller width, convenient for enhanced near-surface resolution.

Model

MNW1

Features

MNW probe features:

- The near wall probes have short blind spots at both ends
- Widely used in composite material channel detection
- Can be used for C-scan testing of composite materials (delamination, debonding and porosity)
- Automatic and manual scanning

Application:

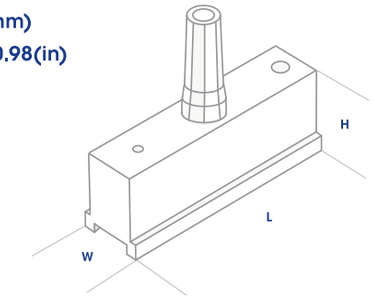
General: small diameter pipe weld, boiler, pipe and process pipe
Petroleum and natural gas: narrower pipes, cylinders and tanks
Automobile: axle, wheel hub, brake disc and other auto parts
Power: wall pipe, plate weld, boiler pipe fittings

Model Select

Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
MNW1	1L32-2.0x7	1	32	2.0	64.0	7.0
	2.25L64-1.0x7	2.25	64	1.0	64.0	7.0
	3.5L64-1.0x7	3.5	64	1.0	64.0	7.0
	5L64-1.0x7	5	64	1.0	64.0	7.0
	7.5L64-1.0x7	7.5	64	1.0	64.0	7.0
	10L64-1.0x7	10	64	1.0	64.0	7.0

Size

MNW1 LxWxH : 66x19x25(mm)
LxWxH : 2.60x0.75x0.98(in)



Small shell chip self-focusing series

Low Profile Series — Self-focusing probe: It acts on the space restricted area, improves the detection accuracy, and reduces the near surface blind area. It plays a very important role in the detection of thin-walled tube.

Model

M15

Features

Features:

- Acoustically, can match with Rexolite
- It can detect standard pipe fittings with outer diameter between 21mm and 115mm, and the special space is limited
- Minimal profile design, wafer self-focusing improves the ability to detect fine defects on thin-walled pipe fittings
- Most beam Angle detection applications can be accomplished with wedges.

Application:

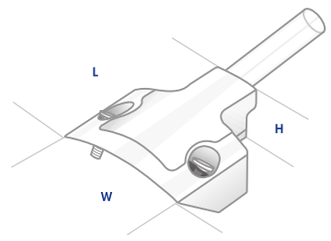
General: small diameter pipe weld, boiler, pipe and process pipe
Thin wall applications: small diameter pipe welds, boiler pipe fittings, low space and process pipe fittings
Automobile: axle, wheel hub, brake disc and other auto parts
It is equipped with a scanner to complete the inspection of most complex parts.

Model Select

Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
M15	2.25EF16-0.5x10*	2.25	16	0.5	8.0	10.0
	3.5EF16-0.5x10*	3.5	16	0.5	8.0	10.0
	5EF16-0.5x10*	5	16	0.5	8.0	10.0
	7.5EF16-0.5x10*	7.5	16	0.5	8.0	10.0
	10EF16-0.5x7*	10	16	0.5	8.0	7.0
	10EF32-0.25x7*	10	16	0.25	8.0	7.0

Size

M15 LxWxH : 25x22x10(mm)
LxWxH : 0.98x0.87x0.39(in)



Concave array series

Concave Series

Concave array probe: the detection is more stable, concave array design better match the detection parts, widely used in CFRP corner detection

Model

MR1

MR4

MR5

Features

Features:

- Acoustic impedance matching water ensures normal operation at a depth of 1 m underwater
- Compatible with adjustable water wedge
- High resolution, more detailed detection, often used for carbon fiber reinforced polymer (CFRP) edge and corner detection
- The exterior is made of stainless steel, durable and durable.

Application:

Automobile: The composite material inside the automobile

Aerospace: Composites, Carbon fiber Reinforced polymers (CFRP)

M2
Product Manuals
Product Series

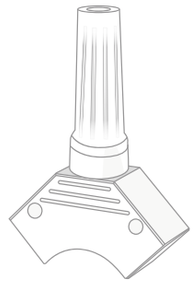
Concave array series

Model Select

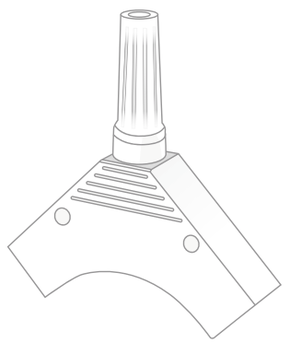
Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
MR1	2.25C16-1.0x8	2.25	16	1.0	16.0	8.0
	3.5C16-1.0x8	3.5	16	1.0	16.0	8.0
	5C16-1.0x8	5	16	1.0	16.0	8.0
MR4	2.25C32-1.35x8	2.25	32	1.35	43.2	8.0
	3.5C32-1.35x8	3.5	32	1.35	43.2	8.0
	5C32-1.35x8	5	32	1.35	43.2	8.0
	10C32-1.35x8	10	32	1.35	43.2	8.0
MR5	3.5C64-1.65x8	3.5	64	1.65	105.6	8.0
	5C64-1.65x8	5	64	1.65	105.6	8.0
	5C128-0.8x8	5	128	0.8	102.4	8.0
	10C64-1.65x8	10	64	1.65	105.6	8.0

Size

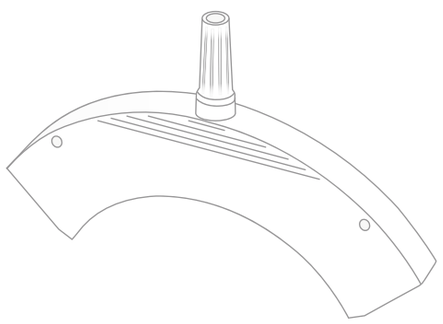
MR1 LxWxH : 23.5x14x23.5(mm)
LxWxH : 0.93x0.55x0.93(in)



MR4 LxWxH : 43x14x43(mm)
LxWxH : 1.69x0.55x1.69(in)



MR5 LxWxH : 131x14x55(mm)
LxWxH : 5.16x0.55x2.17(in)



2D array series

2D Matrix Series

2D array probe: three dimensional spatial focus can be realized, but also can be used for water detection

Model

S10

S11

Features

Features:

- Suitable for high attenuation materials such as soft weathering
- Widely used for adhesive testing
- Can be used for 3D imaging
- Light and flexible, easy to carry, easy to measure

Application:

Railway: train track, wheel track, bridge, etc

Power: welds, forgings, castings, pipe fittings, Bridges and steel structures

Oil and gas: pipeline circumferential weld, tank, conventional weld inspection

Automobile: axle, wheel hub, brake disc and other auto parts

General: weld inspection, bottle weld inspection, pipeline turbine blade inspection and rotor inspection

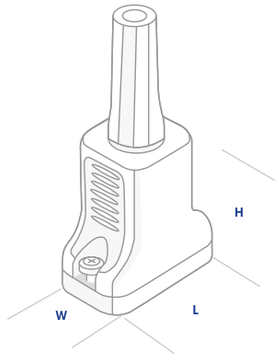
2D array series

Model Select

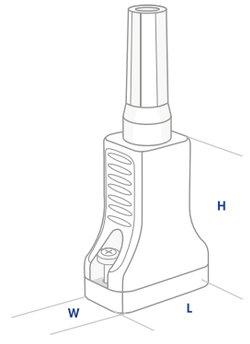
Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)
S10	5M8x8-1.5x1.5	5	64	1.5/1.5	12/12
	7.5M8x8-1.5x1.5	7.5	64	1.5/1.5	12/12
	10M8x8-1.2x1.2	10	64	1.2/1.2	9.6/9.6
	15M8x8-1.2x1.2	15	64	1.2/1.2	9.6/9.6
S11	5M8x8-1.0x1.0	5	64	1.0/1.0	8.0/8.0
	7.5M8x8-0.8x0.8	7.5	64	0.8/0.8	6.4/6.4
	10M8x8-0.6x0.6	10	64	0.6/0.6	4.8/4.8
	15M8x8-0.6x0.6	15	64	0.6/0.6	4.8/4.8

Size

S10 LxWxH : 31x18x34(mm)
LxWxH : 1.22x0.71x1.34(in)



S11 LxWxH : 29x16x38(mm)
LxWxH : 1.14x0.63x1.50(in)



Double 1.5D array series

Dual 1.5D
Matrix Series

Dual 1.5D array probe: brings together the advantages of the one-point-one-collect detection strategy to complete most austenite detection applications

Model

M17/M27

Features

M17/M27 Features:

- Double matrix design, one - to - one longitudinal wave detection, excellent signal-to-noise ratio
- Widely used in austenitic stainless steel, coarse crystal, corrosion resistant alloy and heterogeneous weld welding and complex assembly workpiece.
- Two 1.5D array probes are used together for detection, with a wider detection range and increased detection accuracy. For small defects, the water immersion method can be used as the water probe.

Purpose:

Railway: train track, wheel track, bridge, etc

General: weld inspection, bottle weld inspection, pipeline turbine blade inspection and rotor inspection

Power: Welds, forgings, castings, pipe fittings, bridge and structural steels

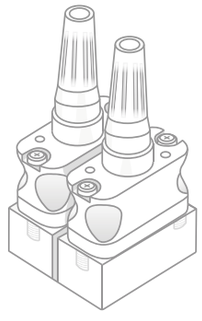
Other: austenite test

Model Select

Classification of case	Model and Specification	Frequency of center (Mhz)	Number of elements (n)	Spacing of elements (mm)	Aperture of activation (mm)	Secondary axis length of wafer (mm)
M17/M27	2.25DM7x4-2.8x3	2.25	56	2.8/3.0	19.6	12.0
	4DM16x2-1.0x3	4	64	1.0/3.0	16.0	6.0
	5DM16x2-1.0x3	5	64	1.0/3.0	16.0	6.0

Size

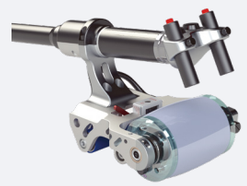
S31 LxWxH : 34x16x25(mm)
LxWxH : 1.34x0.63x0.98(in)



Scanner series

Model

R1

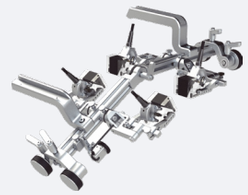


Features:

Features

- Only a small amount of coupling agent can obtain high quality coupling effect
- With simple setup, efficient C-scanning can be achieved
- The 25mm water delay block can be used to detect composite materials with thickness up to 50mm
- Up to 51.2mm wide beam coverage
- Transparent wheel material with very low attenuation
- Zero degree detection of composites and other surface smooth materials
- Plate corrosion detection, large diameter pipe axial corrosion detection

R3

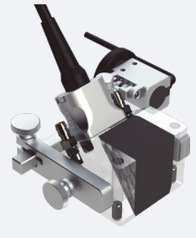


Features:

- The PA-TOFD weld scanner can be applied to the phased array and TOFD detection of flat butt weld and pipeline circumferential weld
- It can assemble 4 probes, and the probe clamping arm can be disassembled by hand only on one side
- Can assemble encoder scan, quickly disassemble, easy to install
- The distance between the walking wheels can be adjusted, which can still work freely on the workpiece with small detection space
- Can hold different sizes of wedges, more adaptable

Model

R6



Features:

- The single-probe simple scanner is mainly used for recording detection of single-phase array probe in pipeline and flat weld
- Simple structure, flexible and convenient, can be 90° according to the need of the probe clamping direction, compatible with "left and right scan" and "front and back scan"
- Can assemble encoder scan, quickly disassemble, easy to install

Phased array wedge

Wedge

Model

Wedges with a refraction Angle of 55° in standard steel are available

The wedge screw holes are embedded with stainless steel braces to ensure that the probe is securely locked with the wedge

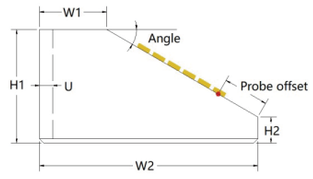
Wedges are available in different IHC options with water injection ports, with sweep holder holding holes, and with wear resistant material anti-wear screws

Wedges can be used for manual or automatic scanning (IHC)

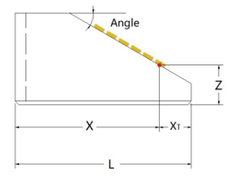
Users can order wedges for specific purposes, such as Angle, shape, wedge material (high temperature resistant material is available), etc

Parameter

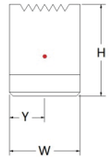
Matching ISONIC instrument	
W2	Length of wedge
Probe offset	Distance from the center of the first array to the short edge of the wedge (direction of the wedge coupling surface)
H2	The height of the lowest side of the wedge



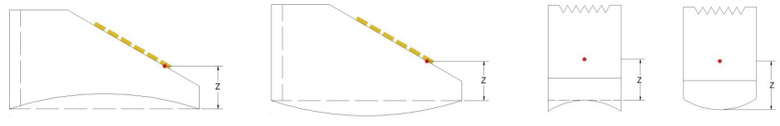
Matching Omniscan instrument	
X	Spindle offset (distance from the center of the first array to the high edge of the wedge)
Y	Secondary axis offset (0 when the probe is in the middle)
Z	The center height of the first matrix



Matching Tomoview instrument	
X	Spindle offset (distance from the center of the first array to the lower edge of the wedge)
Y	Secondary axis offset (0 when the probe is in the middle)
Z	The center height of the first matrix



Omniscan / Tomoview



COD CID AOD AID

Connector、cable and wire protector

Connector

D3(Match the Omniscan instrument)

D19(Match the Phasor instrument)

D5(CONNEC 78PIN)

D6(Hypertronics 160PIN)

D7(matching Topaz/zircon instrument)

D8(CONNON 96PIN)

Electric cable line

Type	50 euro micro coaxial cable with shielding layer				
Number of elements	16	32	64	128	192
Outer diameter of cable	4.6mm	5.0mm	6.3mm	7.6mm	8.0mm
Cable color	Black				
Cable outer cover material	PVC/PU(Low smoke, no halogen)				

- Long service life
- Low signal attenuation
- Good flexibility
- Good bending resistance
- Can be customized temperature resistant, nuclear radiation resistant cable

Protective cover for cable

	Nylon woven net	Plastic corrugated pipe	Metal woven net	Corrugated metal pipe
				
Anti-wear and anti-cutting properties	•	••	•	•••
Pressure proof performance		•		•
water proof		•		
Electromagnetic screen performance		•	•	•

Package

Package

Eintik provides a safety protection case for each product, with external fall and impact resistance and built-in pre-cut mesh cotton to protect the product safety during transportation

❶ Product

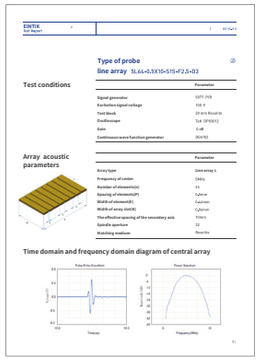
❷ Mesh cotton

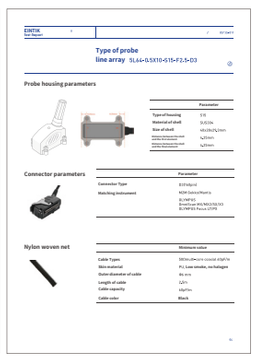
❸ Safety box

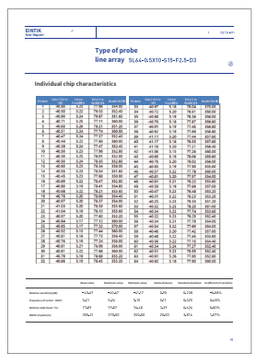
Test Report

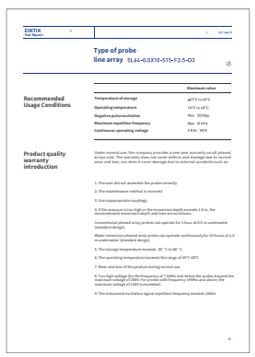
Eintik provides a test report for every probe manufactured, and all of our phased array probes are tested hundreds of times to ensure that they meet customer requirements. Eindec continues to provide users with a comprehensive database of information, including the characteristics of each probe sold. If you have special testing requirements, please contact us.

Each probe produced by Eintec provides a test report with the following information:









After-sale Service

Warranty

Under normal use, the company provides a one-year warranty on all phased arrays sold. The warranty does not cover defects and damage due to normal wear and tear, nor does it cover damage due to external accidents such as:

1. The user did not assemble the probe correctly

2. The maintenance method is incorrect

3. Use inappropriate couplings

4. If the pressure is too high or the immersion depth exceeds 1.0 m, the recommended immersion depth and time are as follows:

Conventional phased array probes can operate for 1 hour at 0.5 m underwater (standard design)

Water immersion phased array probe can operate continuously for 24 hours at 1.0 m underwater (standard design)

5. The storage temperature exceeds -20 ° C to 60 ° C

6. The operating temperature exceeds the range of 10°C-40°C

7. Wear and tear of the product during normal use

8. Too high voltage (for the frequency of 7.5MHz and below the probe, beyond the maximum voltage of 200V; For probes with frequency 19MHz and above, the maximum voltage of 150V is exceeded)

9. The instrument excitation signal repetition frequency exceeds 10kHz

Support

Fast and efficient response, thoughtful and perfect service

Adhere to customer satisfaction for the purpose of scientific and rigorous quality management system to ensure the good performance of equipment

Attentive customer service

We cherish every customer, listen to every customer's voice, and try our best to meet every customer's needs

If you have any questions, call the service hotline, you can get intimate, quick one-stop service

The remote diagnostic maintenance system monitors machine problems in real time and arranges maintenance plans in advance

Telephone at any time to pay attention to the service effect, listen to the voice of customers, and constantly improve satisfaction

Perfect service system

After-sales service management system, real-time technical and data support

Remote diagnostic maintenance system enables preventive maintenance

Shanghai headquarters as a strong backing, to provide strong support for after-sales service

Professional service team

Nearly 100 people service team, distributed in 18 cities across the country

Every engineer receives regular technical training

Perfect knowledge system, strict operation evaluation, ensure the professional skills and quality of engineers

Scientific management methods

The first company passing ISO9001:2015 in the industrial

Apply for 5 invention patents in 2018

Apply for 10 invention patents in 2019

Service process standardization, service quality can be evaluated