

Normal Probe



Wide Frequency Bandwidth Series (Composite Materials)

High signal-to-noise in composite materials
Short pulse, Higher resolution than Mid Frequency series
Wide Bandwidth — typical -6dB bandwidth range $\geq 60\%$

Ordering Information:

M2-20L

Series Code — Frequency — Connector Type — Crystal Dimension $\Phi 20$

Application:

Mainly used for the inspection of transverse defects of general plates (layering, slag inclusion, holes), casting and forging inspection (cracks, slag inclusion, loose, holes, coarse grains).

Series Code	Frequency (MHz)	Crystal Size (mm)	Connector Type
M	0.5/1	$\Phi 19, \Phi 20, \Phi 24, \Phi 25, \Phi 29$	Blank: BNC/ L: LEMO 00/
	2/2.25/2.5	$\Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20, \Phi 24$	L1: LEMO 01/ MD: Microdot
	4/5	$\Phi 6, \Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20$	
	10	$\Phi 6, \Phi 10$	

*LEMO 01 is only available for those crystal size ≥ 24 mm.

*Probes with crystal size 6mm are only compatible with LEMO 00 and Microdot.

*Other frequency and crystal size can be customized.

Replaceable Membrane Normal Probe



Wide Frequency Bandwidth Series (Composite Materials)

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Ordering Information:

RM2-20L

Series Code — Frequency — Connector Type — Crystal Dimension $\Phi 20$

Application:

Mainly used for the inspection of thin workpieces and low acoustic impedance materials.
The protective membrane offers better coupling and reduces probe wear.

Series Code	Frequency (MHz)	Crystal Size (mm)	Connector Type
RM	0.5/1	$\Phi 19, \Phi 20, \Phi 24, \Phi 25$	Blank: BNC/L: LEMO 00/ L1: LEMO 01/MD: Microdot
	2/2.25/2.5	$\Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20, \Phi 24$	
	4/5	$\Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20$	

*LEMO 01 is only available for those crystal size ≥ 24 mm.

*Probes with crystal size 6mm are only compatible with LEMO 00 and Microdot.

*Other frequency and crystal size can be customized.

Series Code	Crystal Size (mm)	Replaceable Membrane
RM	$\Phi 10$	RN-10
	$\Phi 13/\Phi 14$	RN-14
	$\Phi 19/\Phi 20$	RN-20
	$\Phi 24/\Phi 25$	RN-25

Angle Probe



Wide Frequency Bandwidth Series (Composite Materials)

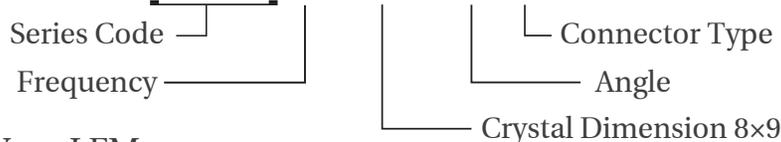
High signal-to-noise in composite materials
Short pulse, Higher resolution than Mid Frequency series
Wide Bandwidth — typical -6dB bandwidth range $\geq 60\%$

Application:

Mainly used for welds, plates, pipes and bars defect detection (transverse and longitudinal cracks, holes, slag inclusion), and thin forgings inspection such as blades.

Ordering Information:

AFM4-89-60L



Transverse Wave AFM and Longitudinal Wave LFM

Series Code	Frequency (MHz)	Crystal Size (mm)	Angle	Connector Type
AFM LFM	1/1.25/1.5	14×14/20×20/20×22	45,60,70	Blank: BNC/ L: LEMO 00/ L1: LEMO 01/ MD: Microdot
	2/2.25/2.5/4/5	6×6/8×9/10×10/14×14/ 14×16/20×20/20×22		

*LEMO 01 is only available for crystal size 20×20mm and 20×22mm.

*Probes with crystal size 6×6mm are only compatible with LEMO 00 and Microdot.

*Other frequency and crystal size can be customized.

Angle Probe With Replaceable Wedge



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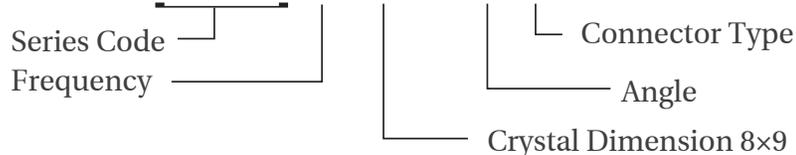
Application:

Mainly used for plates, pipes, axles and welds defect detection (transverse and longitudinal cracks, holes, slag inclusion). A wedge that protects the probe and reduces wear can be replaced easily.

Snail Wedge
(Only available for square crystal)

Ordering Information:

ADM4-89-60L



Series Code	Frequency (MHz)	Crystal Size (mm)	Angle	Connector Type
ADM	2/2.25	13×25, 16×16, 16×19, $\Phi 10, \Phi 13, \Phi 14, \Phi 20$	45,60,70	Blank: BNC/ L: LEMO 00/ MD: Microdot
	2.5/4/5	13×25, 16×16, 16×19, $\Phi 6, \Phi 10, \Phi 13, \Phi 14, \Phi 20$		
	7.5/10	$\Phi 3, \Phi 6$		

*Probes with crystal size 6mm are only compatible with LEMO 00 and Microdot.

*Probes with crystal size 3mm are only compatible with Microdot.

*Other frequency and crystal size can be customized.

Series Code	Crystal Size (mm)	Replaceable Wedge
ADM	$\Phi 3/\Phi 6$	AD-6-45/60/70; LD-6-45/60/70
	$\Phi 10$	AD-10-45/60/70; LD-10-45/60/70
	$\Phi 13/\Phi 14$	AD-14-45/60/70; LD-14-45/60/70

Series Code	Crystal Size (mm)	Replaceable Wedge
ADM	13×25	ADS-20-45/60/70; LDS-20-45/60/70
	16×16/16×19	ADS-20-45/60/70; LDS-20-45/60/70; AWS-45/60/70
	$\Phi 20$	ADS-20-45/60/70; LDS-20-45/60/70

*AD for transverse-wave and LD for longitudinal wave. ADS/LDS for square probe housing type. AWS for snail wedge.

Dual-element Normal Probe



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Application:

Mainly used for the detection of thin workpieces and low acoustic impedance materials. Small dead zone for casting and forging inspection. Focal length can be customized.

Ordering Information:

TRM2.5-14-30L

Series Code — Frequency — Connector Type — Focal Length — Crystal Dimension $\Phi 14$

Series Code	Frequency (MHz)	Crystal Size (mm)	Focal Length (mm)	Connector Type
TRM	2/2.25/2.5	$\Phi 10$	10	L: LEMO 00/ MD: Microdot
		$\Phi 14, \Phi 20, \Phi 24$	10, 20, 30	
		14×18, 12×20	None, 10, 20	
	4/5	$\Phi 10$	10, 20	
		$\Phi 14, \Phi 20, \Phi 24$	10, 20, 30	
		7×10	None, 10, 15	
		10×10, 20×20	10, 15	

* All crystal sizes is for twin-element crystals.
 *Other frequency and crystal size can be customized.

Dual-Element Angle Probe



Wide Frequency Bandwidth Series (Composite Materials)

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Ordering Information:

TRTM2-1010-70L

Series Code — Frequency — Connector Type — Angle — Crystal Dimension 10×10

Application:

Transverse wave angle probes:
 mainly used for the inspection of thin workpieces and welds (when small dead zone and flank, large refraction angle are required), transverse wave inspection of workpieces with large grain size.

Longitudinal wave angle probes:
 mainly used for flaw detection of castings and workpieces with large grain size, weld inspection of coarse grained materials such as Austenite stainless steel.

Transverse Wave TRTM and Longitudinal Wave TRLM

Series Code	Frequency (MHz)	Crystal Size (mm)	Angle	Connector Type
TRTM TRLM	2/4	10×10, 20×20	45, 60, 70	L: LEMO 00/ MD: Microdot

* All crystal sizes is for twin-element crystals.
 *Other frequency and crystal size can be customized.

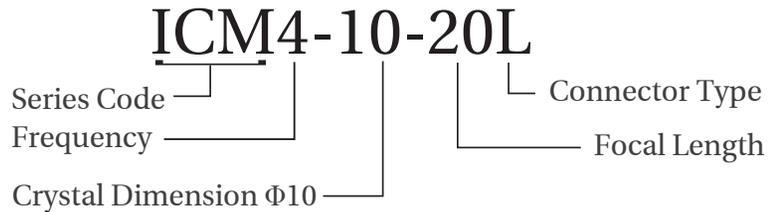
Immersion Probe

Wide Frequency Bandwidth Series (Composite Materials)

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 Wide Bandwidth — typical -6dB bandwidth range $\geq 60\%$



Ordering Information:



Application:

Mainly used for high-precision automatic, semi-automatic, manual scanning of plates, pipes, axles and forgings with regular shapes

Immersion Probe without Focusing

Series Code	Frequency (MHz)	Crystal Size (mm)	Focal Length (mm)	Connector Type
INM	2/2.25/4/5	$\Phi 6, \Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20, \Phi 24, \Phi 25$	None	Blank: BNC/ L: LEMO 00/ L1: LEMO 01/ MD: Microdot

Immersion Probe with Line Focusing

Series Code	Frequency (MHz)	Crystal Size (mm)	Focal Length (mm)	Connector Type
ICM	2/2.25/2.5	$\Phi 6$	10	Blank: BNC/ L: LEMO 00/ L1: LEMO 01/ MD: Microdot
		$\Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20, \Phi 24, \Phi 25$	10,20,30	
	4/5	$\Phi 6$	10,20	
		$\Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20, \Phi 24, \Phi 25$	10,20,30	

Immersion Probe with Point Focusing

Series Code	Frequency (MHz)	Crystal Size (mm)	Focal Length (mm)	Connector Type
ISM	2/2.25/2.5	$\Phi 6$	10	Blank: BNC/ L: LEMO 00/ L1: LEMO 01/ MD: Microdot
		$\Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20, \Phi 24, \Phi 25$	10,20,30	
	4/5	$\Phi 6$	10,20	
		$\Phi 10, \Phi 13, \Phi 14, \Phi 19, \Phi 20, \Phi 24, \Phi 25$	10,20,30	

*LEMO 01 is only available for those crystal size ≥ 24 mm.

*Probes with crystal size 6mm are only compatible with LEMO 00 and Microdot.

*Other frequency and crystal size can be customized.

Delay Line Normal Probe

Wide Frequency Bandwidth Series (Composite Materials)



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Ordering Information:

DM2.5-10L

Series Code ———— Connector Type
 Frequency ———— Crystal Dimension $\Phi 10$

Application:

Very narrow pulse width, high detection resolution and small surface dead zone.
 The delay line is replaceable with optional thickness for selection.

Series Code	Frequency (MHz)	Crystal Size (mm)	Connector Type
DM	2/2.25/2.5	$\Phi 10, \Phi 14$	L: LEMO 00/ MD: Microdot
	4/5	$\Phi 6, \Phi 10$	
	7.5/10	$\Phi 3, \Phi 6$	
	15	$\Phi 3$	

*Probes with crystal size 3mm are only compatible with Microdot.

*Other frequency and crystal size can be customized.

Series Code	Crystal Size (mm)	Replaceable Delay Line
DM	$\Phi 3$	DL-3/DLR-3
	$\Phi 6$	DL-6/DLR-6
	$\Phi 10$	DL-10
	$\Phi 14$	DL-14
	$\Phi 20$	DL-20
	$\Phi 24$	DL-25

* DL-3/DL-6 are compatible with frequency $< 10\text{MHz}$.

* DLR-3/DLR-6 are compatible with frequency $\geq 10\text{MHz}$.

Excitation Conditions for Using Composite Probes

1. When using the probe, the ambient temperature and the temperature of the contacted workpiece shall NOT exceed 60 degrees, and the storage temperature shall NOT exceed 70 degrees. Excessive use and storage temperature may permanently damage the probe.
2. The probe must be excited with a NEGATIVE polarity pulse. The wrong polarity will cause the probe to lose its performance.
3. The allowable excitation voltage for the probe is shown in the table below. The average power that the probe can withstand shall NOT exceed 125mW. If possible, keep the voltage and power values as low as possible.
4. To avoid damage to the probe due to instant ignition during connection under high voltage, when connecting the composite probe to the system, the system shall be frozen (no excitation output).

Probe frequency(MHz)	Max. Pulse Voltage(V)
0.5	-800
1	-700
2	-500
2.25	-500
2.5	-500
3.5	-500
4	-400
5	-400
6	-300
7.5	-300
10	-200
12	-200
15	-200

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