Optima Ultrasonic Transducers

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NDT Systems

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CONTACT Transducers

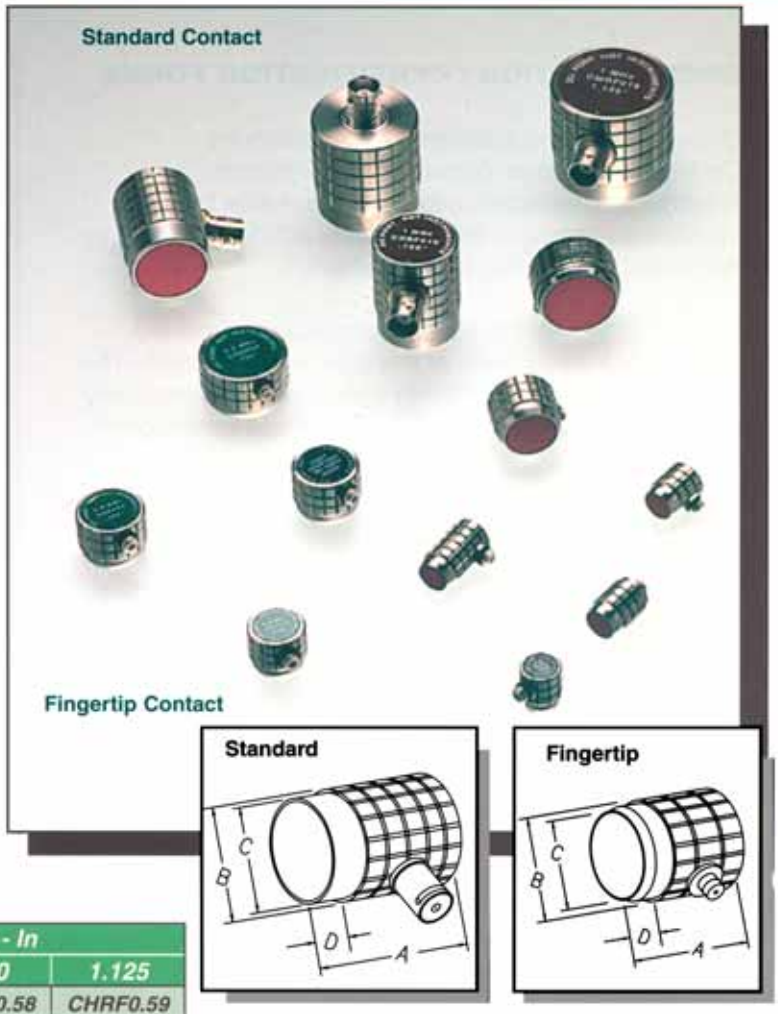
Fingertip & Standard

OPTIMA Fingertip Contact Fingertip transducers are for general purpose use where larger contact transducer won't fit, or where maximum resolution and higher frequencies are needed. With smaller elements and case sizes, these precision fingertip transducers can be used on somewhat smaller contour curvatures than our larger standard models. Best results for precision flaw evaluation will be obtained when used on relatively smooth surfaces.

Features - Fingertip models feature low profile, hardened stainless steel cases with NDT Systems' comfortable, positive-control OPTI-GRIP surface. Color-coded labels permit frequency selection at a glance, and have a highly wear-resistant overcoat to protect the label information. OPTIMA contact fingertip transducers are designed for use with all standard flaw detectors.

OPTIMA Standard Contact transducers are designed for applications where rough handling is expected, where access is not limited, and/or relatively large element size is needed. These units are commonly used on mill-finished wrought metals, forgings, extrusions and castings, or rough-machined materials.

Features - Heavy-duty hardened stainless steel case and wear-resistant alumina wear plate assure long inspection life when used on rough surfaces. These transducers are also easier to handle due to their larger case size. All are tuned with internal matching networks for maximum narrower banded performance giving them extra punchpower, and can be used with any



Freq. MHz	Contact Rugged - Element Diameter - In				
	Series	0.50	0.75	1.00	1.125
0.5	General Purpose	CHRF0.54	CHRF0.56	CHRF0.58	CHRF0.59
	Hi Gain	CMRF0.54	CMRF0.56	CMRF0.58	CMRF0.59
1.0	General Purpose	CHRF014	CHRFO16	CHRFO18	CHRF019
	Hi Gain	CMRF014	CMRF016	CMRF018	CMRF019
2.25	General Purpose	CHRF024	CHRF026	CHRF028	CHRF029
	Hi Gain	CMRF024	CMRF026	CMRF028	CMRF029
3.5	General Purpose	CHRF034	CHRF036	CHRF038	CHRF039
	Hi Gain	CMRF034	CMRF036	CMRF038	CMRF039
5.0	General Purpose	CHRF054	CHRF056	CHRF058	----------
	Hi Gain	CMRF054	CMRFO56	CMRF058	----------

Freq. MHz	Fingertip Contact - Element Diameter - In				
	Series	0.250	0.375	0.500	0.750
1.0	General Purpose	CHF012	CHF013	CHF014	CHF016
	Hi Resolution	----------	----------	CHG014	CHG016
2.25	General Purpose	CHF022	CHF023	CHF024	CHF026
	Hi Resolution	CHG022	CHG023	CHG024	CHG026
3.5	General Purpose	CHF032	CHF033	CHF034	CHF036
	Hi Resolution	CHG032	CHG033	CHG034	CHG036
5.0	General Purpose	CHF052	CHF053	CHF054	CHF056
	Hi Resolution	CHG052	CHG053	CHG054	CHG056
7.5	General Purpose	CHF072	CHF073	CHF074	----------
	Hi Resolution	CHG072	CHG073	CHG074	----------
10.0	General Purpose	CHF102	CHF103	CHF104	----------
	Hi Resolution	CHG102	CHG103	CHG104	----------

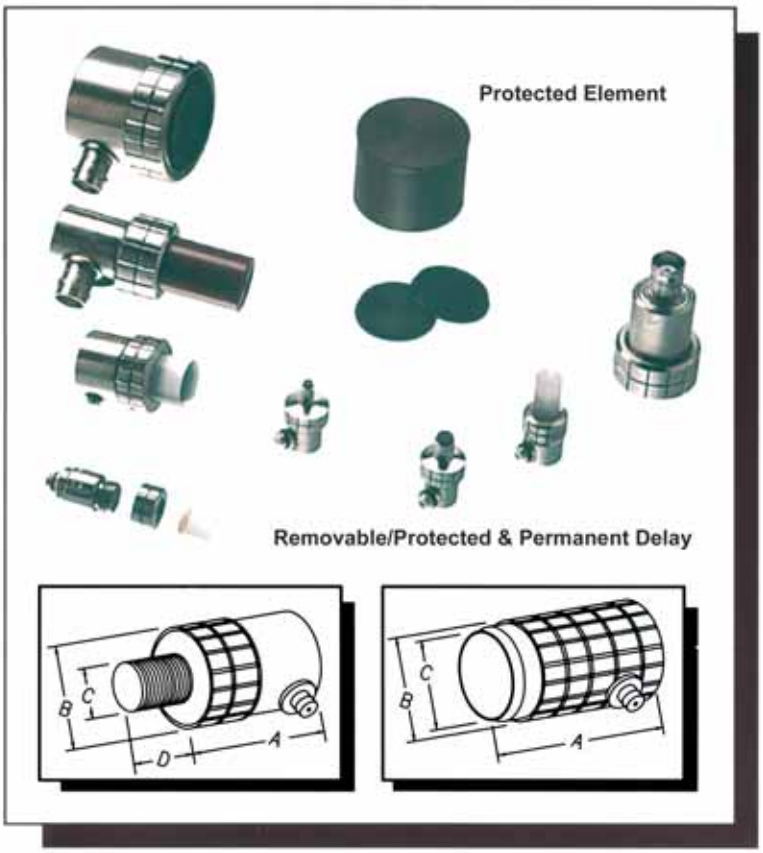
Element Diameter	Rugged Dimentions - In			
	A	B	C	D
0.5	1.31	0.79	0.74	0.32
0.75	1.31	0.98	0.93	0.32
1.0	1.31	1.25	1.19	0.32

Element Diameter	Fingertip Dimentions - In			
	A	B	C	D
0.25	0.55	0.45	0.36	0.15
0.375	0.56	0.625	0.50	0.16
0.50	0.61	0.75	0.62	0.16
0.75	0.65	1.0	0.87	0.16

TO ORDER OPTIMA Contact Transducers use the Model Number from the accompanying table.
***Standard** contact transducers incorporate a side-mounted BNC connector. Top-mounts and UHF connectors are optional and must be designated when ordering.
***Fingertip** models have side-mounted Microdot connectors standard. Top-mounted Microdot connectors are available on some smaller size models.
***For a detailed description of the features** of NDT Systems' GP (General Purpose), HG (High Gain), and HR (High Resolution) series transducers, see page 6.

CONTACT Transducers

Delay Line & Protected Element



OPTIMA Delay Line Contact Transducers have primary applications in precision thickness gaging and for near-surface, high-resolution flaw detection. Relatively smooth surfaces and fairly thin test objects are generally required for best results.

Features of OPTIMA Delay Line Models utilize a plastic stand-off (the delay line) to separate the small, low level echo from the delay-line/test-material interface and the very high amplitude initial pulse-echo at the face of the active element. With a smaller amplitude entry surface echo and higher resolution, more precise distance/thickness measurements can be made than from standard contact style transducers. All OPTIMA Delay Line transducers are highly damped and produce best results when used with broad band receiver settings. Adjustable instrument damping will assure optimum resolution. Delay Line Models are available with both permanent and replaceable delay lines to further enhance the flexibility of this series. Permanent Delay Line Models offer superior handling stability, while Replaceable Delay Lines can be contoured for special applications or replaced when worn.

OPTIMA Protected Element Transducers can be fitted with three different types of replaceable protective faces. Used interchangeably, these protective faces extend the use of a single transducer for flaw detection in materials having rough, uneven, abrasive, or hot surfaces. Relatively large element sizes and low-to-midrange frequencies are combined to produce high energy transducers with high penetrating abilities.

Freq. MHz	Delay Line - Hi Resolution Only - In Style	0.250	0.500
1.0	Permanent Delay	----------	----------
	Replaceable Delay	RDG012	RDG014
2.25	Permanent Delay	----------	PDG024
	Replaceable Delay	RDG022	RDG024
5.0	Permanent Delay	PDG052	PDG054
	Replaceable Delay	RDG052	RDG054
10	Permanent Delay	PDG102	PDG104
	Replaceable Delay	RDG102	RDG104
15	Permanent Delay	PDG152	----------
	Replaceable Delay	PDG152	----------
20	Permanent Delay	PDG202	----------
	Replaceable Delay	RDG202	----------
25	Permanent Delay	PDG252	----------
	Replaceable Delay	RDG252	----------

Protected Element Models are fitted with a threaded retaining ring, which retains any of three protective faces in intimate contact with the transducer element. One type of protective face is a somewhat pliable polymeric membrane used to assist coupling to rough or uneven surfaces. The wear-cap face is a short, firm polymeric delay line that can replaced after use on rough, abrasive surfaces, or where a contoured face is needed. A one-inch long heat-resistant delay line provides protection for the element in high temperature applications (intermittent use up to 600F). All are readily interchangeable.

Element Diameter	Delay Dimentions - In A	B	C	D
0.25				
Permanant Delay	0.80	0.45	0.36	---------
Replaceable Delay	0.64	0.50	0.30	0.27
0.50				
Permanant Delay	0.80	0.75	0.62	---------
Replaceable Delay	0.87	0.87	0.55	0.38

Replacement Delays:

RDL - 2

RDL - 4

Freq. MHz	Protected Element Models - Element Diameter - In Series	0.500	0.750	1.000	1.125
0.5	General Purpose	----------	RHF0.56	RHF0.58	RHF0.59
	Hi Gain	----------	RMF0.56	RMF0.58	RMF0.59
1.0	General Purpose	RHF014	RHF016	RHF018	RHF019
	Hi Gain	RMF014	RMF016	RMF018	RMF019
2.25	General Purpose	RHF024	RHF026	RHF028	RHF029
	Hi Gain	RMF024	RMF026	RMF028	RMF029
3.5	General Purpose	RHF034	RHF036	RHF038	----------
	Hi Gain	RMF034	RHF036	RMF038	----------
5.0	General Purpose	RHF054	RHF056	----------	----------
	Hi Gain	RMF054	RMF056	----------	----------

Face Type	Element Diameter - In 0.50	0.75	1.00	1.13
Standard Wear Cap	WC4	WC6	WC8	WC9
Elastomeric Membrane	RM4	RM6	RM8	RM9
1 Inch Delay Hi Temp	RD4	RD6	RD8	RD9

Element Diameter	Protected Dimentions - In A	B	C
0.50	0.95	0.70	1.28
0.75	1.18	0.95	1.28
1.00	1.37	1.20	1.28
1.125	1.50	1.33	1.33

TO ORDER OPTIMA Delay Line or Standard Series Transducers use the Model Number from the accompanying table.

- **Delay Line** contact transducers incorporate a side-mounted Microdot connector. Top mounted Microdot connectors are optional and must be designated when ordering.
- **Protected Element** models have side-mounted BNC connectors standard. Top-mounted BNC or UHF connectors are available on some smaller size models.
- All Protected models are supplied with the membrane face. Wear-cap and/or high temperature delay must be ordered separately. (See table for part number.)
- For a detailed description of the features of NDT Systems GP (General Purpose), HG (High Gain), and HR (High Resolution) series transducers, see page 6.