EDDYFI TUBING PROBES

Eddyfi Technologies

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WE ARE EDDYFI TECHNOLOGIES

Non-destructive testing (NDT) of critical components is a vital part of integrity management and safety in such industries as nuclear, power generation, oil and gas, and aerospace. World-class engineering, nimble manufacturing, and some of the best minds in advanced testing technologies allow us to offer you the best performing, most reliable advanced electromagnetic hardware and software essential to you and your business.

EDDYFI TECHNOLOGIES

Eddyfi Technologies is headquartered in beautiful Québec, Canada, at the heart of the city's advanced NDT cluster. We are the most dynamic company in the field of advanced NDT equipment—we've made it one of our missions to push the limits of electromagnetic testing to new heights, which we achieve by designing new generations of standard and specialized probes. This is how we manage to offer complete solutions for the inspection of critical components.

THE EDDYFI PROMISE

Unparalleled Quality and Durability

Eddyfi® tubing probes are designed and manufactured using high-performance standards, including top-of-the-line polys, providing top-quality signals over their long lifespan.

Fast Delivery

All Eddyfi probes are manufactured at our Québec facility. Many of them are also kept in stock in our various offices for quick delivery. Standard probe orders of five or less typically ship within three days.

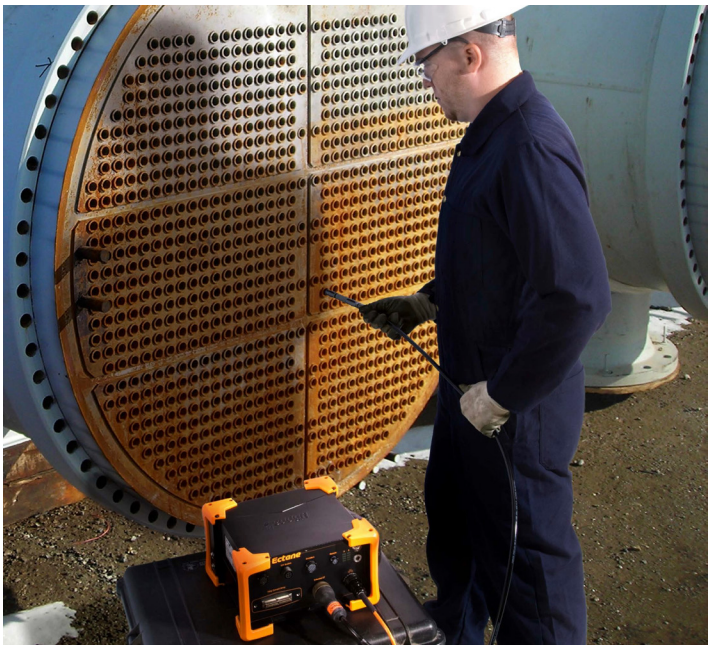
Custom Probes

Eddyfi Technologies has the expertise, engineering, and manufacturing flexibility to supply custom-made solutions for the most challenging tubing applications.

Specialized Probe Technology

Our experts use modeling software, advanced materials and proprietary techniques to engineer probes like DefHi® array to push back the limits of tubing inspection.

For more information, write to probes@eddyfi.com



STANDARD BOBBIN PROBES

A new standard in durability. With their advanced polymer body and stainless steel wear-resistant guides, they are easier to use and longer lasting than most. They are specifically designed to inspect the non-ferromagnetic tubing in condensers, feedwater heaters, and heat exchangers.

FEATURES

- Easy to use
- Designed for non-ferromagnetic tubing
- Uncompromising durability
- Light, advanced polymer body
- Wear-resistant guides
- Highly kink-resistant cable
- 4-pin Amphenol connector

PRBT-ECT-BBST-WWWXX-NZZ

CODE	DIAMETER
070	7.0 mm
072	7.2 mm
074	7.4 mm
...	...
250	25.0 mm
255	25.5 mm
...	...
500	50.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
UF	1	10	5
LF	10	100	50
MF	50	500	250
HF	100	1000	500

POLY	
CODE	LENGTH
15	15 m (50 ft.)
20	20 m (65 ft.)
30	30 m (98 ft.)

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm		3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
		in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
TUBE OD	9.53	0.375	–	–	–	–	–	–	–	–	–	–	070	072	074	076	078
	12.70	0.500	–	–	–	072	078	084	088	090	096	098	102	104	106	106	108
	15.87	0.625	084	090	096	104	110	114	118	122	126	128	132	134	136	136	138
	19.05	0.750	114	122	126	134	140	144	148	152	156	158	162	164	166	166	168
	22.22	0.875	144	152	156	164	168	174	178	180	186	188	192	194	196	196	198
	25.40	1.000	174	182	186	194	198	204	208	210	216	218	222	224	224	226	228
	31.75	1.250	234	238	246	255	260	265	270	275	280	280	285	285	290	290	290
	38.10	1.500	295	300	310	315	320	325	330	335	340	340	345	345	350	350	350
	50.80	2.000	415	420	430	435	440	445	450	455	460	460	465	465	470	470	470

Probe Frequencies

MATERIAL	TUBE WALL THICKNESS														
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
	Aluminum	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
	Aluminum bronze	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
	Brass (admiralty)	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
	Brass (70/30)	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
	Brass (85/15)	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF
	Brass (95/5)	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
	Copper	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF
	Copper-nickel (70/30)	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF
	Copper-nickel (90/10)	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF
	Copper-nickel (95/5)	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
	INCONEL® 600	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF	HF
	Stainless steel 304/316	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF
	Titanium 99%	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF
	Zirconium	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	HF

DETACHABLE BOBBIN PROBES

Durable and economical, with their polymer body and wear-resistant stainless steel guides, they are easier to use and longer lasting than most. Their detachable cable makes the probes cheaper to maintain if you already have compatible cables (see page 33). Specifically designed to inspect the non-ferromagnetic tubing found in condensers, feedwater heaters, and heat exchangers.

FEATURES

- Easy to use
- Designed for non-ferromagnetic tubing
- Uncompromising durability
- Light, advanced polymer body
- Wear-resistant guides
- Detachable LEMO connector with fully protected pins

PRBT-ECT-BBST-WWWXX-D

CODE	DIAMETER
110	11.0 mm
112	11.2 mm
114	11.4 mm
...	...
250	25.0 mm
255	25.5 mm
...	...
500	50.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
UF	1	10	5
LF	10	100	50
MF	50	500	250
HF	100	1000	500

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm		3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
		in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
TUBE OD	15.87	0.625	–	–	–	–	110	114	118	122	126	128	132	134	136	136	138
	19.05	0.750	114	122	126	134	140	144	148	152	156	158	162	164	166	166	168
	22.22	0.875	144	152	156	164	168	174	178	180	186	188	192	194	196	196	198
	25.40	1.000	174	182	186	194	198	204	208	210	216	218	222	224	224	226	228
	31.75	1.250	234	240	246	255	260	265	270	275	280	280	285	285	290	290	290
	38.10	1.500	295	305	310	315	320	325	330	335	340	340	345	345	350	350	350
	50.80	2.000	415	425	430	435	440	445	450	455	460	460	465	465	470	470	470

Probe Frequencies

	TUBE WALL THICKNESS														
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
MATERIAL	Aluminum	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
	Aluminum bronze	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
	Brass (admiralty)	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
	Brass (70/30)	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
	Brass (85/15)	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF
	Brass (95/5)	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
	Copper	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF
	Copper-nickel (70/30)	UF	UF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF
	Copper-nickel (90/10)	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF
	Copper-nickel (95/5)	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
	INCONEL® 600	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF	HF
	Stainless steel 304/316	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF
	Titanium 99%	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF
	Zirconium	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	HF

FLEXIBLE BOBBIN PROBES

Designed to inspect the non-ferromagnetic U-bend tubing of condensers, feedwater heaters, and heat exchangers in a single pass. The welded titanium heads and centering balls offer excellent signal quality, even in U-bends, and make the probes more durable and easy to use.

FEATURES

- Easy to use
- Designed for non-ferromagnetic tubing
- Uncompromising durability
- Titanium head and flexible stainless steel shaft
- Centering ball for excellent signal quality
- Highly kink-resistant cable
- 4-pin Amphenol connector
- U-bend (180°) radiuses as small as 101.6 mm (4 in)

PRBT-ECT-BBFL-WWWXX-NZZ

CODE	DIAMETER
110	11.0 mm
112	11.2 mm
114	11.4 mm
...	...
254	25.4 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
UF	1	10	5
LF	10	100	50
MF	50	500	250
HF	100	1000	500

POLY	
CODE	LENGTH
25	25 m (82 ft.)

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm		3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
		in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
TUBE OD	15.87	0.625	–	–	–	–	110	114	118	122	126	128	132	134	136	136	138
	19.05	0.750	114	118	126	134	140	144	148	152	156	158	162	164	166	166	168
	22.22	0.875	144	148	156	164	168	174	178	180	186	188	192	194	196	196	198
	25.40	1.000	174	178	186	194	198	204	208	210	216	218	222	224	224	226	228

Note: Recommended optimal values for clean tubes not suffering from ovalization in U-bends. Dirty, ovalized tubes may need smaller probes. The probe can always be 0.2 mm (0.008 in) smaller than the optimal value.

Probe Frequencies

	TUBE WALL THICKNESS														
BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
MATERIAL															
Aluminum	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
Aluminum bronze	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
Brass (admiralty)	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
Brass (70/30)	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
Brass (85/15)	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF
Brass (95/5)	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
Copper	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF
Copper-nickel (70/30)	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF
Copper-nickel (90/10)	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF
Copper-nickel (95/5)	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
INCONEL® 600	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF	HF
Stainless steel 304/316	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF
Titanium 99%	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF
Zirconium	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	HF

MAGNETIC SATURATION BOBBIN PROBES

Designed to inspect ferritic stainless, duplex, and nickel-based alloy tubes used in condensers and feedwater heaters. Strong rare-earth magnets provide complete tube wall magnetic saturation, enabling test frequencies common for non-magnetic materials of similar wall thickness and conductivity. Can detect and size ID pitting, OD wear, and MIC attacks.

FEATURES

- For ferritic stainless, duplex, and nickel-based
- Uncompromising durability
- Replaceable, hardened-steel wear guide
- Highly kink-resistant cable
- 4-pin Amphenol connector
- Optimal saturation level

PRBT-ECT-BBFS-WWWXX-NZZ

CODE	DIAMETER
084	8.4 mm
...	...
460	46.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
LF	10	100	50
MF	50	500	250

POLY	
CODE	LENGTH
20	20 m (65 ft.)
30	30 m (98 ft.)

Probe Diameters

			TUBE WALL THICKNESS							
	BWG		10	12	14	16	18	20	22	24
	mm		3.40	2.77	2.11	1.65	1.24	0.89	0.71	0.56
		in	0.135	0.109	0.083	0.065	0.049	0.035	0.028	0.022
TUBE OD	12.70	0.500	–	–	–	–	092*	–	–	–
	15.87	0.625	–	–	–	116*	124*	–	–	–
	19.05	0.750	–	124*	138	148	156	162	166	170
	22.22	0.875	–	156	170	180	188	194	200	200
	25.40	1.000	–	188	200	210	218	224	228	230
	31.75	1.250	230	244	256	265	278	284	288	292
	38.10	1.500	300	310	320	330	340	–	–	–
	50.80	2.000	420	430	440	450	460	–	–	–

*Offers less sensitivity to external defects, because the core section is significantly smaller than the tube section of the probe. Sensitivity to internal defects remains very high.

Probe Frequencies

		TUBE WALL THICKNESS							
	BWG	10	12	14	16	18	20	22	24
	mm	3.40	2.77	2.11	1.65	1.24	0.89	0.71	0.56
	in	0.135	0.109	0.083	0.065	0.049	0.035	0.028	0.022
MATERIAL	MONEL®	LF	LF	LF	LF	MF	MF	MF	MF
	Nickel 200	–	–	–	LF	LF	LF	LF	MF
	Stainless steel grade 439	–	–	–	LF	MF	MF	MF	–
	Duplex Stainless steel (2205), 3RE60	–	LF	LF	MF	MF	MF	MF	–

AIR CONDITIONER PROBES

Durable and economical, with their stainless steel laser welded probe assembly, they are easier to use and longer lasting than most available on the market. Combining the ECT bobbin coils with the AC coil offer a larger defects variety detection. Their detachable cable makes the probes affordable by allowing a better user flexibility, with a single cable being reused for multiple heads. They are also specifically designed to inspect non-ferromagnetic tubes such as those found in air conditioner systems.

FEATURES

- Easy to use
- Designed for non-ferromagnetic tubes
- Uncompromising durability
- Improved connector with protected pins
- Wear and water-resistant
- Lightweight detachable probe head

PRBT-ECT-BBAC-WWWXX-D

CODE	DIAMETER
110	11.0 mm
112	11.2 mm
114	11.4 mm
...	...
230	23.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
UF	1	15	5
LF	10	100	50

Probe Diameters

Depending on the AC/HVAC manufacturer, air conditioner tubes can have an inside diameter and/or outside diameter fins. Also, dimensional specifications sometimes include the fins, but sometimes don't. The most important information for the probe selection is the tube inside diameter (probe diameter selection) and the root thickness (probe frequency selection).

As the AC probes need to fill an optimal portion of the tube inner diameter, their diameters are offered from 11.0 to 23.0 mm by increments of 0.2 mm. It is recommended to select a probe diameter to match a fill factor around 88%. The following formula can be used to find the diameter that matches this fill factor:

$$\text{Diameter} = 2 \times \sqrt{0.88 \times (\text{tube inside diameter}/2)^2}$$

Standard probe dimension should be selected using the closest result to the above formula. For instance, with a tube ID of 14.65 mm, the result of the formula would be 13.74 mm. The 13.8 mm probe should, therefore, be selected. When possible, it is also recommended to keep a lift-off between 0.3 mm and 1 mm around the probe.

Probe Frequencies

		TUBE WALL THICKNESS														
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
MATERIAL	Brass (admiralty)	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
	Brass (70/30)	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
	Brass (85/15)	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF
	Brass (95/5)	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
	Copper	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF

DEFHI ECA PROBES

Designed to inspect the non-ferromagnetic tubing of condensers, feedwater heaters, and heat exchangers. Excellent at detecting circumferential cracks at tube support plates and tubesheets (a major limitation of bobbin probes). DefHi probes can also detect and size usual defects such as wear, corrosion, pitting, micro-pitting, and stress-corrosion cracking. High-frequency DefHi does not have titanium sleeves, as they affect signal quality. Instead, their sleeve is made of highly resistant plastic.

FEATURES

- High-definition, multiplexed ECA probe
- Designed for non-ferromagnetic tubing
- Combination bobbin and array probe
- Size circumferential and axial cracks[1]
- Optimum resolution and uniform sensitivity with oval coil technology[2]
- Highly kink-resistant cable, replaceable centering devices
- Wider frequency range (HW to HF)
- Analysis with bobbin strip charts and array C-scans

[1] Advanced option only
[2] Patented—Eddyfi NDT Inc.

DEFHI-TUV-WWWXX-NZZ

OPTION	MULTIPLEXER ECTANE2/PROBE	BODY RIGID/FLEX	CONFIGURATION BOBBIN	CONFIGURATION CIRCUM.	CONFIGURATION AXIAL	DIAMETER	FREQUENCY	POLY LENGTH
1	E	R	B	C	–	Probe diameter 3-digit code, (e.g., 146 = 14.6 mm)	HW: 4–60 kHz LF: 20–200 kHz	05: 5 m (16 ft.)
2	E	R	B	C	A	**Contact for availability of required diameters**	MF: 50–500 kHz* HF: 100–1200 kHz**	15: 15 m (50 ft.)

* Maximum MF reduced to 400 kHz with 15 m cable.
** Maximum HF reduced to 1 MHz with 15 m cable.

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm		3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
		in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
TUBE OD	12.70	0.500	–	–	–	–	–	–	–	–	096	096	102	102	106	106	106
	15.87	0.625	–	–	096	102	106	114	118	118	126	126	132	132	136	136	136
	19.05	0.750	114	118	126	136	140	148	148	148	156	156	162	162	166	166	170
	22.22	0.875	148	148	156	166	170	178	178	186	186	192	192	196	196	196	200
	25.40	1.000	178	186	186	196	200	208	208	216	220	220	226	226	226	230	230

Probe Frequencies

MATERIAL	TUBE WALL THICKNESS														
BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
Brass (admiralty)	–	–	–	–	–	HW	HW	HW	HW	HW	LF	LF	LF	LF	LF
Brass (70/30)	–	–	–	–	–	HW	HW	HW	HW	HW	LF	LF	LF	LF	LF
Brass (85/15)	–	–	–	–	–	–	HW	HW	HW	HW	HW	LF	LF	LF	LF
Brass (95/5)	–	–	–	–	–	–	–	–	HW	HW	HW	HW	HW	LF	LF
Copper	–	–	–	–	–	–	–	–	–	–	HW	HW	HW	HW	HW
Copper-nickel (70/30)	HW	HW	HW	HW	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF
Copper-nickel (90/10)	–	HW	HW	HW	HW	HW	LF	LF	LF	LF	LF	MF	MF	MF	MF
Copper-nickel (95/5)	–	–	–	HW	HW	HW	HW	HW	LF	LF	LF	LF	LF	MF	MF
INCONEL® 600	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF	HF
Stainless steel 304/316	HW	LF	LF	LF	LF	LF	MF	MF	MF	MF	HF	HF	HF	HF	HF
Titanium 99%	HW	HW	HW	LF	LF	LF	LF	LF	MF	MF	MF	MF	HF	HF	HF
Zirconium	HW	HW	HW	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF

Total Number of Array Channels (Frequency, Configuration)

PROBE DIAM.	FREQ. CONFIG.	HW		LF		MF	
		BC	BCA	BC	BCA	BC	BCA
	096-106	–	–	12	36	18	54
	114-140	12	36	18	54	18	54
	148-178	12	36	24	72	24	72
	186-196	18	54	24	72	24	72
	200-230	18	54	30	90	30	90

PROBE DIAM.	FREQ. CONFIG.	HF	
		BC	BCA
	096-106	–	–
	132-136	18	54
	162-170	24	72
	196-200	30	90
	226-230	36	108

SINGLE-DRIVER REMOTE-FIELD TESTING (RFT) PROBES

Because their driver and receiver coils produce similar responses, they are optimized for absolute signal analysis. From diameters 20 mm (0.787 in) and beyond, the probe's body is made of light advanced polymer. Under 20 mm, they are equipped with stainless steel sleeves. The probes are particularly well suited to detecting common defects (corrosion, erosion, wear, pitting) and to the ferromagnetic tubing in feedwater heaters, heat exchangers, and piping.

FEATURES

- Preamplifier in probe head (30 dB)
- Optimized for absolute signal analysis
- Uncompromising durability
- Highly kink-resistant, very flexible cable
- Low friction noise
- 19-pin Amphenol connector

PRBT-RFT-SDST-WWWXX-NZZ

CODE	DIAMETER
0.85	8.5 mm
0.90	9.0 mm
100	10.0 mm
...	...
200	20.0 mm
220	22.0 mm
...	...
440	44.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
LF	0.01	0.4	0.05
MF*	0.05	2	0.3
HF	0.5	20	2.5

* Typical frequency range

POLY	
CODE	LENGTH
20	20 m (65 ft.)
30	30 m (98 ft.)

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm		6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
		in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
TUBE OD	12.70	0.500	–	–	–	–	–	–	–	–	–	–	–	–	085	085	090
	15.87	0.625	–	–	–	–	–	–	–	085	090	100	100	110	110	110	120
	19.05	0.750	–	–	–	–	–	100	110	110	120	120	130	130	140	140	140
	22.22	0.875	–	100	100	110	120	130	130	140	140	150	160	160	160	170	170
	25.40	1.000	120	120	130	140	150	150	160	170	170	180	180	190	190	190	200
	31.75	1.250	170	180	190	200	200	220	220	220	220	240	240	240	240	240	260
	38.10	1.500	220	240	240	260	260	260	280	280	280	300	300	300	300	320	320
	50.80	2.000	340	360	360	380	380	380	400	400	400	420	420	420	420	420	440

Probe Frequencies

	TUBE WALL THICKNESS														
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
MATERIAL	Carbon steel A178, A179, A192, A214	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	Cast iron (gray)	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF
	Ductile iron	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF
	Nickel 200	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF
	Stainless steel 439, A268, TP439	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF
	Duplex Stainless steel (2205), 3RE60, A789	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF

SINGLE-DRIVER REMOTE-FIELD TESTING (RFT) FLEXIBLE PROBES

Welded on a flexible stainless steel shaft, each driver and receiver modules are designed to be resistant and waterproof to manage a whole heat exchanger U-bend tube in a single pass. The probes are particularly well suited to detect common defects (corrosion, erosion, wear, pitting) and to inspect the ferromagnetic tubing in feedwater heaters, heat exchangers, and piping.

FEATURES

- Easy to use
- Preamplifier in probe head (30 dB)
- Optimized for absolute signal analysis
- Highly kink-resistant cable
- Welded stainless steel head and flexible shaft
- Uncompromising durability
- Low friction noise
- 19-pin Amphenol connector
- Can pass U-bends (180°) of 7 × tubes OD and higher

PRBT-RFT-SDFL-WWWXX-NZZ

CODE	DIAMETER
100	10.0 mm
110	11.0 mm
120	12.0 mm
...	...
220	22.0 mm
240	24.0 mm
260	26.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
LF	0.01	0.4	0.05
MF*	0.05	2	0.3
HF	0.5	20	2.5

* Typical frequency range

POLY	
CODE	LENGTH
25	25 m (82 ft.)

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm		6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
		in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
PROBE OD	15.87	0.625	–	–	–	–	–	–	–	–	–	100	100	110	110	110	120
	19.05	0.750	–	–	–	–	–	100	110	110	120	120	130	130	140	140	140
	22.22	0.875	–	100	100	110	120	130	130	140	140	150	160	160	160	170	170
	25.40	1.000	120	120	130	140	150	150	160	170	170	180	180	190	190	190	200
	31.75	1.250	170	180	190	200	200	220	220	220	220	240	240	240	240	240	260
	38.10	1.500	220	240	240	260	260	260	260	–	–	–	–	–	–	–	–

Probe Frequencies

	TUBE WALL THICKNESS														
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
MATERIAL	Carbon steel A178, A179, A192, A214	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	Cast iron (gray)	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF
	Ductile iron	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF
	Nickel 200	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF
	Stainless steel 439, A268, TP439	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF
	Duplex Stainless steel (2205), 3RE60, A789	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF

SINGLE-DRIVER REMOTE-FIELD TESTING (RFT) PROBES FOR BOILERS

Equipped with spring-loaded centering devices, they are waterproof and extremely flexible for easy controlled travel along tight bends. The probes are offered in diameters corresponding to the most common boiler tubes, but custom probe diameters are available on demand. Particularly well suited to detecting common defects (corrosion, erosion, wear, pitting) and ferromagnetic tubing of boilers and piping.

FEATURES

- Preamplifier in probe head (30 dB)
- Spring-loaded centering devices
- Highly flexible design
- Uncompromising durability
- Highly kink-resistant cable
- Waterproof
- 19-pin Amphenol connector
- Can pass elbow-shaped bend of 3 × tube OD and higher

PRBT-RFT-SDBL-WWWXX-NZZ

CODE	DIAMETER
260	26.0 mm
320	32.0 mm
360	36.0 mm
400	40.0 mm
450	45.0 mm
500	50.0 mm
...	...
700	70.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
LF	0.01	0.4	0.05
MF*	0.05	2	0.3
HF	0.5	20	2.5

* Typical frequency range

POLY	
CODE	LENGTH
20	20 m (65 ft.)
30	30 m (98 ft.)

Probe Diameters

			TUBE WALL THICKNESS													
	BWG		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	mm		7.62	7.21	6.58	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11
		in	0.300	0.284	0.259	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083
TUBE OD	38.10	1.500	–	–	–	–	–	–	–	260	260	260	260	260	260	260
	50.80	2.000	260	320	320	320	320	320	360	360	360	360	360	360	360	400
	63.50	2.500	400	400	400	400	450	450	450	450	450	450	450	500	500	500
	76.20	3.000	500	500	500	550	550	550	550	550	550	550	600	600	600	600
	88.90	3.500	600	600	600	650	650	650	650	650	650	700	700	700	700	700

Probe Frequencies

	TUBE WALL THICKNESS													
	BWG	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	mm	7.62	7.21	6.58	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11
	in	0.300	0.284	0.259	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083
MATERIAL	Carbon steel A178, A179, A192, A214	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF
	Cast iron (gray)	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	Ductile iron	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF
	Nickel 200	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	Stainless steel 439, A268, TP439	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF
	Duplex Stainless steel (2205), 3RE60, A789	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF

DUAL-DRIVER REMOTE-FIELD TESTING (RFT) PROBES

Optimized for differential signal analysis and defects close to tube support plates. From 20.0 mm (0.787 in) and beyond, the probe's body is made of light, advanced polymer. Under 20 mm, the probes are equipped with stainless steel sleeves. They are particularly well suited to detecting common defects (corrosion, erosion, wear, pitting) and ferromagnetic tubing of feedwater heaters, heat exchangers, and piping.

FEATURES

- Preamplifier in probe head (30 dB)
- Optimized for differential signal analysis
- Uncompromising durability
- Highly kink-resistant, very flexible cable
- Low friction noise
- 19-pin Amphenol connector

PRBT-RFT-DDST-WWWXX-NZZ

CODE	DIAMETER
100	10.0 mm
110	11.0 mm
...	...
200	20.0 mm
220	22.0 mm
...	...
440	44.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
LF	0.01	0.4	0.05
MF*	0.05	2	0.3
HF	0.5	20	2.5

* Typical frequency range

POLY	
CODE	LENGTH
20	20 m (65 ft.)
30	30 m (98 ft.)

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm		6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
		in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
TUBE OD	15.87	0.625	–	–	–	–	–	–	–	–	–	100	100	110	110	110	120
	19.05	0.750	–	–	–	–	–	100	110	110	120	120	130	130	140	140	140
	22.22	0.875	–	100	100	110	120	130	130	140	140	150	160	160	160	170	170
	25.40	1.000	120	120	130	140	150	150	160	170	170	180	180	190	190	190	200
	31.75	1.250	170	180	190	200	200	220	220	220	220	240	240	240	240	240	260
	38.10	1.500	220	240	240	260	260	260	280	280	280	300	300	300	300	320	320
	50.80	2.000	340	360	360	380	380	380	400	400	400	420	420	420	420	420	440

Probe Frequencies

	TUBE WALL THICKNESS														
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
MATERIAL	Carbon steel A178, A179, A192, A214	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	Cast iron (gray)	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF
	Ductile iron	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF
	Nickel 200	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF
	Stainless steel 439, A268, TP439	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF
	Duplex Stainless steel (2205), 3RE60, A789	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF

DUAL-RECEIVER REMOTE-FIELD TESTING (RFT) PROBES

Composed of a single Exciter/Driver in the center and two sets of receiver coils at the ends, the signal obtained shortens the blinded regions close to external features, allowing for increased detection at the proximity of these regions. The RFT-SDDR is good for any ferrous heat exchangers and boilers, small or large.

FEATURES

- Dual receiver coils
- Higher detection near support plates and other external features
- Both absolute (ABS) and differential (DIFF) signals at each probe ends (Lead and Trail)
- Onboard 30 dB preamplifiers
- Uncompromising durability
- 19-pin Amphenol connector
- Highly kink-resistant cable

PRBT-RFT-SDDR-WWWXX-NZZ

CODE	DIAMETER
100	10.0 mm
110	11.0 mm
...	...
220	22.0 mm
240	24.0 mm
...	...
500	50.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
LF	0.01	0.4	0.05
MF*	0.05	2	0.3
HF	0.5	20	2.5

* Typical frequency range

POLY	
CODE	LENGTH
20	20 m (65 ft.)
30	30 m (98 ft.)

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm		6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
		in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
TUBE OD	15.87	0.625	–	–	–	–	–	–	–	–	–	100	100	110	110	110	120
	19.05	0.750	–	–	–	–	–	100	110	110	120	120	130	130	140	140	140
	22.22	0.875	–	100	100	110	120	130	130	140	140	150	160	160	160	170	170
	25.40	1.000	120	120	130	140	150	150	160	170	170	180	180	190	190	190	200
	31.75	1.250	170	180	190	200	200	220	220	220	220	240	240	240	240	240	260
	38.10	1.500	220	240	240	260	260	260	280	280	280	300	300	300	300	320	320
	50.80	2.000	340	360	360	380	380	380	400	400	400	420	420	420	420	420	440
	63.50	2.480	460	480	480	500	500	–	–	–	–	–	–	–	–	–	–

Probe Frequencies

	TUBE WALL THICKNESS														
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
MATERIAL	Carbon steel A178, A179, A192, A214	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	Cast iron (gray)	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF
	Ductile iron	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF
	Nickel 200	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF
	Stainless steel 439, A268, TP439	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF
	Duplex Stainless steel (2205), 3RE60, A789	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF

REMOTE FIELD ARRAY (RFA) PROBES

The Eddyfi Remote-Field Array (RFA) tube probe family brings high-resolution C-scan imaging to ferrous heat exchangers (HX) at conventional Remote-Field Testing (RFT) acquisition speeds. The technology is powered by a patent pending, low-frequency multiplexing protocol.

FEATURES

- High-resolution C-scan imaging for greater insight on defect morphology
- Same pulling speed, cleaning, and fill factor requirements as conventional RFT
- Centering devices maintain constant liftoff in field conditions, leading to improved detection.
- Reduced blind zones near interfering components

PRBT-RFA-DDSA-XXXMF-NZZ

CODE	DIAMETER
110	11.0 mm
115	11.5 mm
...	...
230	23.0 mm

CODE	FREQUENCY (kHz)		
–	Min.	Max.	Central
MF	0.05	2	0.3

POLY	
CODE	LENGTH
20	20 m (65 ft.)
30	30 m (98 ft.)

Probe Diameters

			TUBE WALL THICKNESS														
	BWG		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm		6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
		in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
TUBE OD	15.87	0.625	-	-	-	-	-	-	-	-	-			110	110	115	120
	19.05	0.750	-	-	-	-	-	-	110	115	120	125	130	135	140	140	145
	22.22	0.875	-			115	120	130	135	140	145	155	160	165	165	170	175
	25.40	1.000	115	125	135	145	150	160	165	170	175	180	185	190	195	200	200
	31.75	1.250	175	180	190	200	205	215	220	225	230	-	-	-	-	-	-

Probe Frequencies

	TUBE WALL THICKNESS														
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049
MATERIAL	Carbon steel A178, A179, A192, A214	–	–	–	–	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	Cast iron (gray)	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	–	–	–	–
	Ductile iron	–	–	–	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	–
	Nickel 200	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	–	–
	Stainless steel 439, A268, TP439	MF	MF	MF	–	–	–	–	–	–	–	–	–	–	–	–

NEAR-FIELD TESTING (NFT) PROBES

Designed to inspect aluminum-finned carbon steel tubes in fin-fan coolers. The probe coil configuration allows reliably detecting internal defects such as corrosion, erosion, and axial cracking. The probes are sleeved with stainless steel.

FEATURES

- Optimized for internal defect detection
- Designed to inspect aluminum-finned carbon steel tubes in fin-fan coolers
- Uncompromising durability
- Stainless steel body
- Highly kink-resistant, very flexible cable
- Superior absolute baseline signal
- 19-pin Amphenol connector

PRBT-NFT-BBAD-WWWXX-NZZ

TUBE OD		TUBE WT			DIAMETER			FREQUENCY		POLY		PART NUMBER
MM	IN	BWG	MM	IN	CODE	MM	IN	CODE	RANGE	CODE	LENGTH	
19.05	0.750	10	3.40	0.134	110	11	0.433	MF	50-2000 Hz	20 30	20 m (65 ft.) 30 m (98 ft.)	PRBT-NFT-BBAD-110MF-NZZ
		11	3.05	0.120	120	12	0.472					PRBT-NFT-BBAD-120MF-NZZ
		12	2.77	0.109								
		13	2.41	0.095	130	13	0.512					PRBT-NFT-BBAD-130MF-NZZ
		14	2.11	0.083								
		15	1.83	0.072	140	14	0.551					PRBT-NFT-BBAD-140MF-NZZ
		16	1.65	0.065								
		17	1.47	0.058								
		18	1.24	0.049	150	15	0.591					PRBT-NFT-BBAD-150MF-NZZ
25.40	1.000	9	3.76	0.148	160	16	0.630					PRBT-NFT-BBAD-160MF-NZZ
		10	3.40	0.134	170	17	0.669					PRBT-NFT-BBAD-170MF-NZZ
		11	3.05	0.120								
		12	2.77	0.109	180	18	0.709					PRBT-NFT-BBAD-180MF-NZZ
		13	2.41	0.095								
		14	2.11	0.083	190	19	0.748					PRBT-NFT-BBAD-190MF-NZZ
		15	1.83	0.072								
		16	1.65	0.065	200	20	0.787					PRBT-NFT-BBAD-200MF-NZZ
		17	1.47	0.058								
		18	1.24	0.049	210	21	0.827					PRBT-NFT-BBAD-210MF-NZZ

TUBE OD		TUBE WT			DIAMETER			FREQUENCY		POLY		PART NUMBER
MM	IN	BWG	MM	IN	CODE	MM	IN	CODE	RANGE	CODE	LENGTH	
31.75	1.250	8	4.19	0.165	210	21	0.827	MF	50-2000 Hz	20 30	20 m (65 ft.) 30 m (98 ft.)	PRBT-NFT-BBAD-210MF-NZZ
		9	3.76	0.148	220	22	0.866					PRBT-NFT-BBAD-220MF-NZZ
		10	3.40	0.134								
		11	3.05	0.120	230	23	0.906					PRBT-NFT-BBAD-230MF-NZZ
		12	2.77	0.109								
		13	2.41	0.095	240	24	0.945					PRBT-NFT-BBAD-240MF-NZZ
		14	2.11	0.083	250	25	0.984					PRBT-NFT-BBAD-250MF-NZZ
		15	1.83	0.072								
		16	1.65	0.065								
		17	1.47	0.058	260	26	1.024					PRBT-NFT-BBAD-260MF-NZZ
		18	1.24	0.049								
38.10	1.500	8	4.19	0.165	270	27	1.063					PRBT-NFT-BBAD-270MF-NZZ
		9	3.76	0.148	280	28	1.102					PRBT-NFT-BBAD-280MF-NZZ
		10	3.40	0.134								
		11	3.05	0.120	290	29	1.142					PRBT-NFT-BBAD-290MF-NZZ
		12	2.77	0.109	300	30	1.181					PRBT-NFT-BBAD-300MF-NZZ
		13	2.41	0.095								
		14	2.11	0.083	310	31	1.220					PRBT-NFT-BBAD-310MF-NZZ
		15	1.83	0.072								
50.80	2.000	6	5.16	0.203	380	38	1.496					PRBT-NFT-BBAD-380MF-NZZ
		7	4.57	0.180								
		8	4.19	0.165	400	40	1.575					PRBT-NFT-BBAD-400MF-NZZ
		9	3.76	0.148								
		10	3.40	0.134								
		11	3.05	0.120	420	42	1.654					PRBT-NFT-BBAD-420MF-NZZ
		12	2.77	0.109								
		13	2.41	0.095								
		14	2.11	0.083								

NEAR-FIELD ARRAY (NFA) PROBES

Designed to inspect aluminum-finned carbon steel tubes of fin-fan coolers and ferromagnetic heat exchangers. The coil configuration allows reliably detecting and sizing internal defects such as ID pitting, internal cracking at the tubesheets, internal erosion, and wall loss.

FEATURES

- Designed to inspect aluminum-finned carbon steel tubes of fin-fan coolers and ferromagnetic heat exchangers
- High-resolution C-scans of tubes at NFT speeds
- Detect and size defects in a single pass
- Detect axial and circumferential cracks
- Rugged and easy to use—No magnets
- Replaceable hardened-steel wear guides
- Wide variety of probe diameters

PRBT-NFA-BBAA-WWWXX-NZZ

TUBE OD		TUBE WT			DIAMETER			FREQUENCY		POLY		PART NUMBER
MM	IN	BWG	MM	IN	CODE	MM	IN	CODE	RANGE	CODE	LENGTH	
19.05	0.750	12	2.77	0.109	124	12.4	0.488	MF	1-40 kHz	20 30	20 m (65 ft.) 30 m (98 ft.)	PRBT-NFA-BBAA-124MF-NZZ
		13	2.41	0.095	130	13.0	0.512					PRBT-NFA-BBAA-130MF-NZZ
		14	2.11	0.083	138	13.8	0.543					PRBT-NFA-BBAA-138MF-NZZ
		15	1.83	0.072	142	14.2	0.559					PRBT-NFA-BBAA-142MF-NZZ
		16	1.65	0.065	148	14.8	0.583					PRBT-NFA-BBAA-148MF-NZZ
		17	1.47	0.058								
		18	1.24	0.049	156	15.6	0.614					PRBT-NFA-BBAA-156MF-NZZ
		19	1.07	0.042								
		20	0.89	0.035	162	16.2	0.638					PRBT-NFA-BBAA-162MF-NZZ
		21	0.81	0.032								
25.40	1.000	10	3.40	0.134	170	17.0	0.669					PRBT-NFA-BBAA-170MF-NZZ
		11	3.05	0.120	180	18.0	0.709					PRBT-NFA-BBAA-180MF-NZZ
		12	2.77	0.109	184	18.4	0.724					PRBT-NFA-BBAA-184MF-NZZ
		13	2.41	0.095	188	18.8	0.740					PRBT-NFA-BBAA-188MF-NZZ
		14	2.11	0.083	194	19.4	0.764					PRBT-NFA-BBAA-194MF-NZZ
		15	1.83	0.072	200	20.0	0.787					PRBT-NFA-BBAA-200MF-NZZ
		16	1.65	0.065	206	20.6	0.811					PRBT-NFA-BBAA-206MF-NZZ
		17	1.47	0.058	210	21.0	0.827					PRBT-NFA-BBAA-210MF-NZZ
		18	1.24	0.049								
		19	1.07	0.042	218	21.8	0.858					PRBT-NFA-BBAA-218MF-NZZ
		20	0.89	0.035								

TUBE OD		TUBE WT			DIAMETER			FREQUENCY		POLY		PART NUMBER
MM	IN	BWG	MM	IN	CODE	MM	IN	CODE	RANGE	CODE	LENGTH	
31.75	1.250	8	4.19	0.165	218	21.8	0.858	MF	1-40 kHz	20 30	20 m (65 ft.) 30 m (98 ft.)	PRBT-NFA-BBAA-218MF-NZZ
		10	3.40	0.134	230	23.0	0.906					PRBT-NFA-BBAA-230MF-NZZ
		11	3.05	0.120	236	23.6	0.929					PRBT-NFA-BBAA-236MF-NZZ
		12	2.77	0.109	244	24.4	0.961					PRBT-NFA-BBAA-244MF-NZZ
		13	2.41	0.095	250	25.0	0.984					PRBT-NFA-BBAA-250MF-NZZ
		14	2.11	0.083	256	25.6	1.008					PRBT-NFA-BBAA-256MF-NZZ
		15	1.83	0.072	262	26.2	1.031					PRBT-NFA-BBAA-262MF-NZZ
		16	1.65	0.065								
		17	1.47	0.058	268	26.8	1.055					PRBT-NFA-BBAA-268MF-NZZ
		18	1.24	0.049	274	27.4	1.079					PRBT-NFA-BBAA-274MF-NZZ
38.10	1.500	8	4.19	0.165								
		9	3.76	0.148	282	28.2	1.110					PRBT-NFA-BBAA-282MF-NZZ
		10	3.40	0.134	290	29.0	1.142					PRBT-NFA-BBAA-290MF-NZZ
		11	3.05	0.120	296	29.6	1.165					PRBT-NFA-BBAA-296MF-NZZ
		12	2.77	0.109	302	30.2	1.189					PRBT-NFA-BBAA-302MF-NZZ
		13	2.41	0.095	308	30.8	1.212					PRBT-NFA-BBAA-308MF-NZZ

MAGNETIC FLUX LEAKAGE (MFL) PROBES

Designed to inspect the aluminum-finned carbon steel tubes of fin-fan coolers. The probe coil configuration enables reliably detecting internal and external defects such as corrosion, erosion, pitting, and circumferential cracking.

FEATURES

- Designed to inspect aluminum-finned carbon steel tubes in
- fin-fan coolers
- Optimized for internal and external defect detection
- Capable of detecting circumferential cracks
- No ABS drift adapter box necessary
- Replaceable hardened-steel wear guides
- Uncompromising durability
- Optimal saturation level
- Highly kink-resistant cable
- 19-pin Amphenol connector

PRBT-MFL-ADT-XXX-NZZ

TUBE OD		TUBE WT			DIAMETER			POLY		PART NUMBER	NOTE
MM	IN	BWG	MM	IN	CODE	MM	IN	CODE	LENGTH		
19.05	0.750	12	2.77	0.109	124	12.4	0.488	20 30	20 m (65 ft.) 30 m (98 ft.)	PRBT-MFL-ADT-124-NZZ	These probes offer less sensitivity to external defects, because their core sections are significantly smaller than the tube section. Sensitivity to internal defects remains very high.
		13	2.41	0.095							
		14	2.11	0.083	138	13.8	0.543			PRBT-MFL-ADT-138-NZZ	
		15	1.83	0.072							
		16	1.65	0.065	148	14.8	0.583			PRBT-MFL-ADT-148-NZZ	
25.40	1.000	9	3.76	0.148	162	16.2	0.638			PRBT-MFL-ADT-162-NZZ	
		10	3.40	0.134	170	17.0	0.669			PRBT-MFL-ADT-170-NZZ	
		11	3.05	0.120	180	18.0	0.709			PRBT-MFL-ADT-180-NZZ	
		12	2.77	0.109							
		13	2.41	0.095	188	18.8	0.740			PRBT-MFL-ADT-188-NZZ	
		14	2.11	0.083	194	19.4	0.764			PRBT-MFL-ADT-194-NZZ	
		15	1.83	0.072							
		16	1.65	0.065	200	20.0	0.787			PRBT-MFL-ADT-200-NZZ	
		17	1.47	0.058							

TUBE OD		TUBE WT			DIAMETER			FREQUENCY		PART NUMBER	NOTE
MM	IN	BWG	MM	IN	CODE	MM	IN	CODE	RANGE		
31.75	1.250	10	3.40	0.134	230	23.0	0.906	20	20 m (65 ft.)	PRBT-MFL-ADT-230-NZZ	
		11	3.05	0.120				30	30 m (98 ft.)		
		12	2.77	0.109	244	24.4	0.961			PRBT-MFL-ADT-244-NZZ	
		13	2.41	0.095							
		14	2.11	0.083	256	25.6	1.008			PRBT-MFL-ADT-256-NZZ	
		15	1.83	0.072							
38.10	1.500	10	3.40	0.134	290	29.0	1.142			PRBT-MFL-ADT-290-NZZ	
		11	3.05	0.120							
		12	2.77	0.109	302	30.2	1.189			PRBT-MFL-ADT-302-NZZ	
		13	2.41	0.095							
		14	2.11	0.083	315	31.5	1.240			PRBT-MFL-ADT-315-NZZ	
		15	1.83	0.072							

INTERNAL ROTARY INSPECTION SYSTEMS (IRIS)

IRIS UT leverages ultrasound to inspect ferrous and non-ferrous tubing. Eddyfi IRIS UT kits are particularly versatile, precisely detecting corrosion, pitting, and thinning in a wide range of tube diameters and wall thicknesses.

PART NO.	DESCRIPTION	
IRIS-KIT-FUL	IRIS kit including (pump and filter sold separately [page 20])	
	• 2 turbines • 4 centering devices • 3 transducers	• 4 cables (20 m/65 ft.) • 1 flood tube adapter • 1 repair kit

PART NO.	DESCRIPTION	
IRIS-KIT-FUL-w/MICRO	IRIS kit including (pump and filter sold separately [page 20])	
	• 3 turbines • 4 centering devices • 4 transducers	• 4 cables (20 m/65 ft.) • 1 flood tube adapter • 1 repair kit

PART NO.	DESCRIPTION	
IRIS-KIT-MICRO	IRIS kit including (pump and filter sold separately [page 20])	
	• 1 turbine • 1 centering devices	• 1 transducer • 1 cable (20 m/65 ft.)

Transducers

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
IRIS-TD-10M-254	10 MHz, 25.4 mm focal length	IRIS-TD-15M-254	15 MHz, 25.4 mm focal length
IRIS-TD-10M-318	10 MHz, 31.8 mm focal length	IRIS-TD-15M-318	15 MHz, 31.8 mm focal length
IRIS-TD-10M-381	10 MHz, 38.1 mm focal length	IRIS-TD-15M-381	15 MHz, 38.1 mm focal length
IRIS-TD-10M-445	10 MHz, 44.5 mm focal length	IRIS-TD-15M-445	15 MHz, 44.5 mm focal length
IRIS-TD-10M-508	10 MHz, 50.8 mm focal length	IRIS-TD-15M-508	15 MHz, 50.8 mm focal length
IRIS-TD-10M-635	10 MHz, 63.5 mm focal length	IRIS-TD-15M-635	15 MHz, 63.5 mm focal length
IRIS-TD-10M-762	10 MHz, 76.2 mm focal length	IRIS-TD-15M-762	15 MHz, 76.2 mm focal length
IRIS-TD-10M-889	10 MHz, 88.9 mm focal length	IRIS-TD-15M-889	15 MHz, 88.9 mm focal length
IRIS-TD-20M-254	20 MHz, 25.4 mm focal length	IRIS-MTD-20M-191	20 MHz, 19.1 mm focal length
IRIS-TD-20M-318	20 MHz, 31.8 mm focal length		
IRIS-TD-20M-381	20 MHz, 38.1 mm focal length		

Turbines

Eddyfi IRIS turbines are engineered to leverage the impressive Ectane® acquisition rate and deliver optimal results for a wide range of rotation speeds, up to 120 rps. The unique mechanical design significantly reduces the formation of bubbles and allows smooth operation for successful ultrasonic inspections.

FEATURES

- Unequalled rotation speed
- No trapped air bubbles
- Easy maintenance

PART NO.	DESCRIPTION
IRIS-TB-085	Diameter 8.5 mm (0.335 in) — *Micro-turbine*
IRIS-TB-120	Diameter 12 mm (0.472 in)
IRIS-TB-170	Diameter 17 mm (0.669 in)

Centering Devices

Two sets of three spring-loaded arms linked in two directions ensure perfect centering. All the devices are self-contained and removable from the shaft (except the extra-small model) without loss of component or arm pressure. They are available in sizes covering tube ODs 12.7–167.6 mm (0.50–6.60 in).

FEATURES

- Linked arms for better centering
- Self-contained
- Fast and simple assembly
- Easy maintenance

PART NO.	DESCRIPTION
IRIS-CDXS-SLA	Extra-small centering device with spring-loaded arms (SOD 9.4–18.5 mm)
IRIS-CDXS	Extra-small centering device (SOD 11.4–18.0 mm)
IRIS-CDSM-SLA	Small centering device with spring-loaded arms (SOD 18.0–25.4 mm)
IRIS-CDMD	Medium centering device with spring-loaded arms (SOD 26.0–42.0 mm)
IRIS-CDLG	Large centering device with spring-loaded arms (SOD 38.1–76.2 mm)
IRIS-CDXL	Extra-large IRIS centering device (SOD 72–169 mm) mounted on a rigid rod

Cables

IRIS UT kits can be equipped with an assortment of cables for various types of inspection conditions.

PART NO.	DESCRIPTION
IRIS-CBL-CDXS-SLA-N15	Nylon, diameter 7.9 mm (0.313 in), 15 m (49 ft.) for extra-small centering device with spring-loaded arms
IRIS-CBL-N15	Nylon, diameter 7.9 mm (0.313 in), 15 m (49 ft.)
IRIS-CBL-CDXS-SLA-N20	Nylon, diameter 7.9 mm (0.313 in), 20 m (66 ft.) for extra-small centering device with spring-loaded arms
IRIS-CBL-N20	Nylon, diameter 7.9 mm (0.313 in), 20 m (66 ft.)
IRIS-CBL-CDXS-SLA-N30	Nylon, diameter 7.9 mm (0.313 in), 30 m (98 ft.) for extra-small centering device with spring-loaded arms
IRIS-CBL-N30	Nylon, diameter 7.9 mm (0.313 in), 30 m (98 ft.)
IRIS-CBL-BNC	BNC, 3 m (10 ft.)

ACCESSORIES

Flood Tube Adapters

PART NO.	DESCRIPTION
IRIS-FLOOD-MICRO	For extra-small centering device with spring-loaded arms
IRIS-FLOOD	Flood tube adapter (two sizes)

Pumps and Filters

PART NO.	DESCRIPTION
IRIS-WPFT-120	120v submersible water pump and filter unit
IRIS-WPFT-220	240v submersible water pump and filter unit

Encoders

The Eddyfi encoder allows accurately reporting defect positions along tubes by monitoring the movement of the probe. The reliable and simple-to-use encoder mechanism offers superior precision compared to traditional landmarks.

PART NO.	DESCRIPTION
PRBT-ENC-STD-1-18P-N04	Cable encoder for tubing probe, including fixtures for the flood tube adapter and 4 m (13.1 ft.) cable
PRBT-ENC-STD-1-18P-SP-WHL	Manual encoder replacement wheel (×1) for base section

IRIS SELECTION TABLE FOR TUBING

Example

CDSM-SLA: Small centering device

TB-170: 17.0 mm (0.67 in) turbine

TD-15M-254: 15 MHz, 25.4 mm (1 in) focal length transducer

			TUBE WALL THICKNESS								
	BWG		4	6	8	10	12	14	16	18	20
	mm		6.05	5.16	4.19	3.40	2.77	2.11	1.65	1.24	0.89
		in	0.238	0.206	0.165	0.135	0.109	0.083	0.065	0.049	0.035
TUBE OD	12.70	0.500	–	–	–	–	–	–	CDXS-SLA TB-085-M TD-20M-191	CDXS-SLA TB-085-M TD-20M-191	–
	15.87	0.625	–	–	–	–	CDXS-SLA TB-085-M TD-20M-191	CDXS-SLA TB-085-M TD-20M-191	CDXS-SLA TB-120 TD-20M-254	CDXS TB-120 TD-20M-254	CDXS TB-120 TD-20M-254
	19.05	0.750	–	–	CDXS-SLA TB-085-M TD-20M-191	CDXS-SLA TB-085-M TD-20M-191	CDXS-SLA TB-120 TD-15M-254	CDXS-SLA TB-120 TD-15M-254	CDXS-SLA TB-120 TD-20M-254	CDXS-SLA TB-120 TD-20M-254	CDXS-SLA TB-120 TD-20M-254
	22.22	0.875	CDXS-SLA TB-085-M TD-20M-191	CDXS-SLA TB-085-M TD-20M-191	CDXS-SLA TB-120 TD-10M-254	CDXS-SLA TB-120 TD-15M-254	CDXS-SLA TB-120 TD-15M-254	CDXS-SLA TB-120 TD-15M-254	CDXS-SLA TB-120 TD-20M-254	CDXS-SLA TB-120 TD-20M-254	–
	25.40	1.000	CDXS-SLA TB-120 TD-10M-254	CDXS-SLA TB-120 TD-10M-254	CDXS-SLA TB-120 TD-10M-254	CDXS-SLA TB-120 TD-15M-254	CDSM-SLA TB-170 TD-15M-318	CDSM-SLA TB-170 TD-15M-318	CDSM-SLA TB-170 TD-20M-318	CDSM-SLA TB-170 TD-20M-318	–
	31.75	1.250	CDSM-SLA TB-170 TD-10M-318	CDSM-SLA TB-170 TD-10M-318	CDSM-SLA TB-170 TD-10M-318	CDMD TB-170 TD-15M-318	CDMD TB-170 TD-15M-318	CDMD TB-170 TD-15M-381	CDMD TB-170 TD-15M-381	–	–
	38.10	1.500	CDMD TB-170 TD-10M-318	CDMD TB-170 TD-10M-318	CDMD TB-170 TD-10M-381	CDMD TB-170 TD-15M-381	CDMD TB-170 TD-15M-381	CDMD TB-170 TD-15M-381	CDMD TB-170 TD-15M-381	–	–
	50.80	2.000	CDMD TB-170 TD-10M-381	CDMD TB-170 TD-10M-381	CDLG TB-170 TD-10M-445	CDLG TB-170 TD-15M-445	CDLG TB-170 TD-15M-445	CDLG TB-170 TD-15M-445	CDLG TB-170 TD-15M-445	–	–
	63.50	2.500	CDLG TB-170 TD-10M-445	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-15M-508	CDLG TB-170 TD-15M-508	CDLG TB-170 TD-15M-508	–	–	–
	76.20	3.000	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-15M-508	CDLG TB-170 TD-15M-508	CDLG TB-170 TD-15M-508	–	–	–

IRIS SELECTION TABLE FOR PIPING

DIMENSIONS						UT TRANSDUCERS (mHz, MM, IN)						RECOMMENDED SPEEDS			SMALLEST DECT. DEFECT (TYP.)	
						10			15							
NPS	OD		WALL THICKNESS			63.5	76.2	88.9	63.5	76.2	88.9	ROT.	PULL			
	MM	IN	SCH	MM	IN	2.5	3.0	3.5	2.5	3.0	3.5	RPS	MM/S	IN/S	MM	IN
3	88.9	3.500	10	3.05	0.120				●			83	50.8	2.0	4.3	0.169
			40	5.49	0.216							55			4.0	0.157
			80	7.62	0.300	●						57	53.3	2.1	3.8	0.150
3½	101.6	4.000	10	3.05	0.120	●			●			48	45.7	1.8	5.0	0.197
			40	5.74	0.226							50			4.7	0.185
			80	8.08	0.318	●						51	48.3	1.9	4.4	0.173
4	114.3	4.500	10	3.05	0.120	●				●		44	40.6	1.6	5.6	0.220
			40	6.02	0.237		●					45	43.2	1.7	5.3	0.209
			80	8.56	0.337		●					47			5.0	0.197
5	140.6	5.563	10	3.40	0.134						●	37	33.0	1.3	7.0	0.276
			40	6.55	0.258			●				38	35.6	1.4	6.6	0.260
			80	9.53	0.375			●				39			6.3	0.248
6	168.3	6.625	40	7.11	0.280			●				33	30.5	1.2	8.0	0.315
			80	10.97	0.432			●				34			7.6	0.299

CABLES AND ADAPTERS

Our premium replacement cables and adapters are perfectly suited to your Eddyfi products

Detachable Probe Cables

PART NO.	DESCRIPTION
PRBT-ECT-CBL-095-N15	Premium ECT nylon, diameter 9.5 mm (0.375 in), 15 m (49 ft)
PRBT-ECT-CBL-095-N20	Premium ECT nylon, diameter 9.5 mm (0.375 in), 20 m (66 ft)
PRBT-ECT-CBL-095-N30	Premium ECT nylon, diameter 9.5 mm (0.375 in), 30 m (98 ft)

AC Probe Cables

PART NO.	DESCRIPTION
PRBT-BBAC-CBL-095-Hxx	Air Conditioner HDPE probe cable for BBAC detachable probe — diameter 9.5 mm (0.375 in), 2 × 4-pin Amphenol connectors, available in 10, 15, 20 or 30 meters
PRBT-BBAC-CBL-095-Lxx	Air Conditioner LLDPE probe cable for BBAC detachable probe — diameter 9.5 mm (0.375 in), 2 × 4-pin Amphenol connectors, available in 10, 15, 20 or 30 meters

Adapters

PART NO.	DESCRIPTION
PRBT-ADAPT-41×4	41-pin male Amphenol to 4-pin female Amphenol ECT bobbin probe adapter
PRBT-ADAPT-41×4&4	41-pin male Amphenol to 2× female 4-pin Amphenol dual ECT bobbin probe adapter
PRBT-ADAPT-41×AC	41-pin male Amphenol to 2× female 4-pin Amphenol air-conditioning probe adapter
PRBT-ADAPT-41×36	41-pin male Amphenol to 36-pin female Amphenol probe adapter
PRBT-ADAPT-41×6	41-pin male Amphenol to 6-pin male Jaeger (switchable) ECT bobbin probe adapter
PRBT-ADAPT-19×3&6	19-pin male Amphenol to 3-pin and 6-pin female Amphenol RFT probe adapter
PRBT-ADAPT-19×5&6	19-pin male Amphenol to 5-pin ITT Cannon and 6-pin female Amphenol RFT probe adapter
PRBT-ADAPT-19×3&5&6	19-pin male Amphenol to 5-pin ITT Cannon, 3-pin and 6-pin female Amphenol with 15 dB preamplifier universal RFT probe adapter
PRBT-ADAPT-19×8	19-pin male Amphenol to 8-pin female Amphenol MFL probe adapter
PRBT-ADAPT-8×19	8-pin male Amphenol to 19-pin female Amphenol MFL probe adapter

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