

# 0.020" & 0.030" Centers

Micro Series Spring Probes

Board Test Fixture Probes & Receptacles



# Board Test Spring Probes

Smiths Interconnect offers a wide range of spring contact probes to meet your testing requirements and has long been recognized as the world's largest probe manufacturer. With over 60 different probe series that includes our standard Board Test Fixture Probes as well as our Specialty Test Probes, we provide a full portfolio designed for general purpose test on bare boards, loaded printed circuit boards, surface mount assemblies and other forms of test.



## MICRO SERIES PROBES

The Micro probe series range in pitch from 0.20" (0.51 mm) to 0.030" (0.76 mm) pitch and are typically between half an inch to an inch in length.

## ROTATOR PROBES

Ideal for non-clean and lead-free applications, this aggressive probe rotates 90° at the rated travel, virtually drilling through contaminants with a low spring force.

## STANDARD PROBES

Our standard probes range in pitch from 0.039" (1.00 mm) to 0.187" (4.75 mm). Within most series, there are multiple length and travel options, including more aggressive probes dimensionally equivalent to the standard probes.

## HIGH CURRENT PROBES

We offer two different high current probe designs in four different pitches. The SH series features a bias ball, which is the most aggressive biasing technique to aid in assuring a low and consistent resistance, cycle after cycle. The SHE Series features a bias spring, an effective biasing technique for many applications.

## DOUBLE-ENDED PROBES & RECEPTACLES

Double-ended probes feature both a top-side and bottom-side compliant plunger. Double-ended receptacles are available with a permanent bottom-side plunger and a replaceable probe on the top side. They are also available with both a top and bottom-side replaceable probe.

## SWITCH PROBES

A Switch Probe is a spring contact probe and receptacle that has two individual current paths. One current path is closed, the other is open and after a designated travel the second current path closes.

## LEAD FREE PROBES

The Lead Free probe series is based on our ICT Probe Series. The plunger material, plating and tip geometry have been optimized to provide less wear and contamination build-up while using a moderate spring force of 7 to 8 ounces.

## THERMOCOUPLE PROBES

The Thermocouple Probe is an ungrounded, thermally conductive probe used for the measurement of variations in temperature. We offer two Thermocouple Probes: Type T for up to 220°F, and Type K for up to 350°F.

## ICT PROBES

The ICT probe design features a bifurcated barrel with four separate fingers. The barrel is compliant and formed against the plunger, thus eliminating any gap between the plunger and barrel. ICT probes are more accurate and stable in resistance than standard designs.

## COAXIAL PROBES

Our Coax Probes provide a low noise, controlled impedance signal path with reliable, easy connect/disconnect options. Our designs include a spring-loaded signal probe and a spring-loaded shielding plunger for the ground.

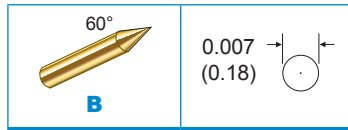
# Quad-00 Series

## 0.020 (0.51) Centers

For Quad-00Rec Series Receptacles see pg. 5



### Steel Tip Diameter



### Probe Specifications

Minimum Centers	0.020 (0.51)
Current Rating	0.30 A continuous
Spring Force	0.75 oz (21 g) @ 0.067 (1.70) travel
Preload Force	0.23 oz (6.5 g)
Typical Resistance	< 160 mΩ
Maximum Travel	0.100 (2.54)
Working Travel	0.067 (1.70)

### Materials

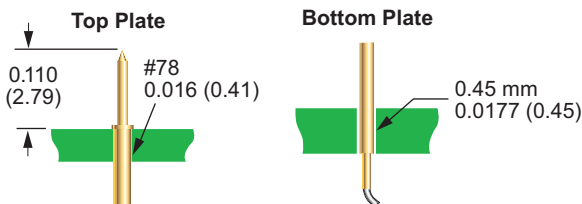
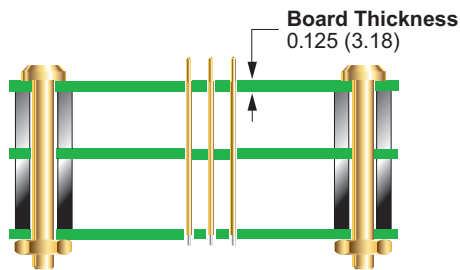
Barrel	Gold alloy
Spring	Music wire, gold plated
Plunger	Steel, gold plated over nickel

### How to Order

QUAD-00 B  
1 2

1 Series	QUAD-00
2 Tip Style	B

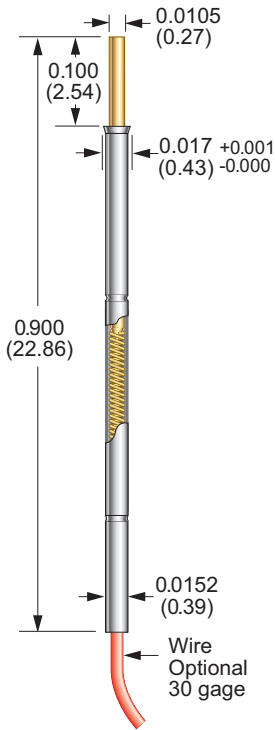
### Fixturing Options



# Quad-0 Series

0.020 (0.51) – 0.030 (0.76) Centers

For Quad-0Rec Series Receptacles see pg. 6



### Steel Tips Diameter

Tip Style	Diameter
<b>B</b> 60°	0.0105 (0.27)
<b>C</b>	0.0105 (0.27)
<b>J</b>	0.0105 (0.27)

### Probe Specifications

Minimum Centers	0.020 (0.51) (without receptacle) 0.030 (0.76) (with receptacle)
Current Rating	0.50 A continuous
Spring Force	0.70 oz (20 g) @ 0.045 (1.14) travel
Preload Force	0.40 oz (11 g)
Typical Resistance	< 60 mΩ
Maximum Travel	0.100 (2.54)
Working Travel	0.045 (1.14)

### Materials

Barrel	Nickel/silver, gold lined
Spring	Stainless steel, gold plated
Plunger	Steel, gold plated over nickel

### Fixturing

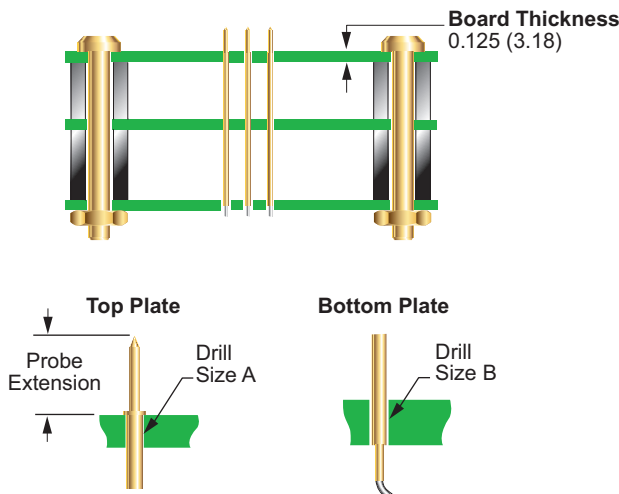
Probe Extension	Probe: 0.110 (2.79) Receptacle: 0.210 (5.33)
Drill Size A	Probe: #78 0.016 (0.41) Receptacle: #72 0.025 (0.64)
Drill Size B	Probe: 0.45 mm: 0.0177 (0.45) Receptacle: 0.70 mm: 0.0276 (0.70)

### How to Order

QUAD-0 C-36-1  
1 2 3

1 Series	QUAD-0
2 Tip Style	B, C, J
3 Wire <sup>(1)(2)</sup>	00-0 No wire
	12-1 Wire length 12", 1" strip length
	36-1 Wire length 36", 1" strip length

### Fixturing Options



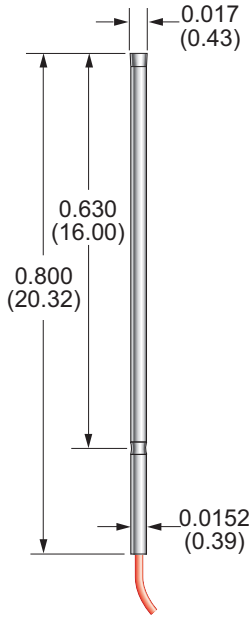
1. Unless otherwise specified, wire length 36", strip length 1", 30 gage heavy build magnet wire preattached, 12" and 36" standard  
 2. Probes with wires are not intended for use with receptacles  
 Dimensions are in inches (mm) | All specifications are subject to change

# Quad-00Rec Series

## 0.020 (0.51) Centers

For Quad-00 Series Probes see pg. 3

Part Number	Style/Termination	Receptacle Length	Probe/Receptacle Combined Length
QUAD-00REC	Preattached Wire <sup>(1)</sup>	0.800 (20.32)	0.910 (23.11)



### Probe Specifications

Minimum Centers	0.020 (0.51)
Drill Size	#78
Mounting Hole Size	0.016 (0.41)
Recommended Wire	30 gage
Materials	Nickel/silver, gold lined inside

### How to Order

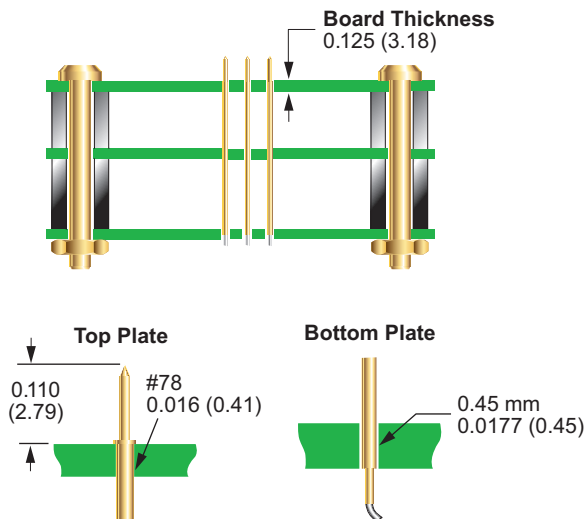
QUAD - 00REC - 36 - 1

1

2

1 Series	QUAD - 00REC
	0 - 0 No wire
2 Wire <sup>(1)</sup>	12 - 1 Wire length 12", 1" trip length
	36 - 1 Wire length 36", 1" strip length

### Fixturing Options



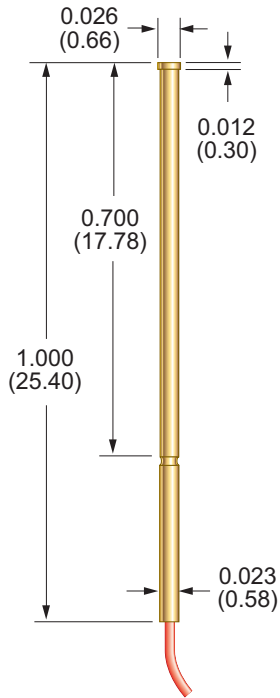
1. Wire length 36" with a 1" strip length, 12" & 36" standard, 30 gage heavy build magnet wire  
Dimensions are in inches (mm) | All specifications are subject to change

# Quad-0Rec Series

0.020 (0.51) – 0.030 (0.76) Centers

For Quad-0 Series Probes see pg. 4

Part Number	Style/Termination	Receptacle Length	Probe/Receptacle Combined Length
QUAD-OREC	Preattached Wire <sup>(1)</sup>	1.000 (25.40)	1.200 (30.48)



## Probe Specifications

Minimum Centers	0.020 (0.51) (without receptacle) 0.030 (0.76) (with receptacle)
Drill Size A	Probe: #78 0.016 (0.41) Receptacle: #72 0.025 (0.64)
Drill Size B	Probe: 0.45 mm: 0.0177 (0.45) Receptacle: 0.70 mm: 0.0276 (0.70)
Mounting Hole Size	0.024/0.025 (0.61/0.64)
Probe Extension	0.210 (5.33)
Recommended Wire	26 gage
Materials	Nickel/silver, gold plated

## How to Order

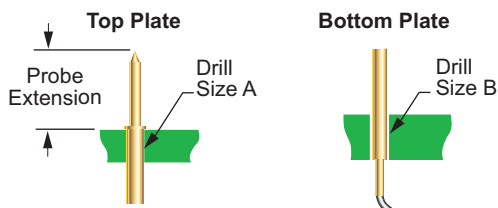
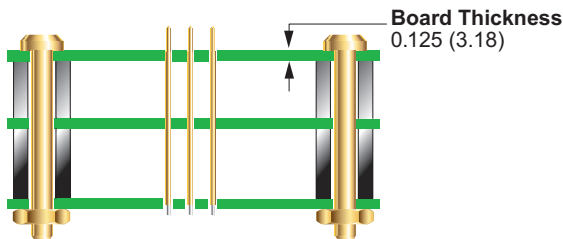
QUAD - OREC - 36 - 1

1

2

1 Series	QUAD - OREC
	0 - 0 No wire
2 Wire <sup>(1)</sup>	12 - 1 Wire length 12", 1" strip length
	36 - 1 Wire length 36", 1" strip length

## Fixturing Options



1. Wire length 36" with a 1" strip length, 12" & 36" standard, 26 gage heavy build magnet wire  
Dimensions are in inches (mm) | All specifications are subject to change

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