# AMARATHON SHEATER

**HEATERS AND THERMOCOUPLES** 

# Thermocouples & RTD Sensors



#### THERMOCOUPLES & RTD SENSORS



# **MARATHON HEATER**

808 Hackberry Lane—HCR 3, **Box 86E** Del Rio, TX 78840 (830) 775-1417

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www.marathonheater.com

Marathon Heater is pleased to present our line of premium temperature sensors. We offer standard thermocouples, mineral insulated thermocouples, and RTDs. Marathon has hundreds of different models in stock and offers quick turnaround, usually 48 hours or less, on custom designed and manufactured units. We use only the highest grade materials and offer a variety of sheath materials for any environment or temperature range. All sensors are subject to rigid quality control procedures and a thorough inspection process. Expert engineering assistance is readily available for any order size, large or small. In addition to you sensor needs, Marathon can engineer a complete thermal system for you. Worldwide on site support is available through one of our many distributors or representatives.

Contact Marathon Heater today and let us help you.

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100's of Stock Items Ready for Immediate Delivery

# Adjustable Depth Thermocouples w/ Stainless Steel Armor

#### **Standard Features**

- 3/16" diameter probe
- Fits standard bayonet adapters
- 12" spring with bayonet cap
- Grounded construction
- 24 ga. Fiberglass leads with stainless steel armor
- Spade lugs

Type J with Spade Lugs		Type J with Polarized Plug
Stock Number	Lead Length	Stock Number
JAC24-G1-24R1	24"	JAC24-G1-24R2
JAC36-G1-24R1	36"	JAC36-G1-24R2
JAC48-G1-24R1	48"	JAC48-G1-24R2
JAC72-G1-24R1	72"	JAC72-G1-24R2
JAC96-G1-24R1	96"	JAC96-G1-24R2
JAC120-G1-24R1	120"	JAC120-G1-24R2
JAC144-G1-24R1	144"	JAC144-G1-24R2



Type K with Spade Lugs		Type K with Polarized Plug
Stock Number	<u>Lead Length</u>	Stock Number
KAC24-G1-24R1	24"	KAC24-G1-24R2
KAC36-G1-24R1	36"	KAC36-G1-24R2
KAC48-G1-24R1	48"	KAC48-G1-24R2
KAC72-G1-24R1	72"	KAC72-G1-24R2
KAC96-G1-24R1	96"	KAC96-G1-24R2
KAC120-G1-24R1	120"	KAC120-G1-24R2
KAC144-G1-24R1	144"	KAC144-G1-24R2

#### **Available Options**

- 2 wire or 3 wire RTD
- Type T
- 1/8" diameter probe
- Custom probe length
- Polarized plug or jack
- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- Additional lead lengths available
- Custom orders welcome

# Adjustable Depth Thermocouples w/ Stainless Steel Overbraid

#### **Standard Features**

- 3/16" diameter probe
- Fits standard bayonet adapters
- 12" spring with bayonet cap
- Grounded construction
- 24 ga. Fiberglass leads with SS overbraid
- Spade lugs

Type J with Spade Lugs		Type J with Polarized Plug
Stock Number	Lead Length	Stock Number
JBS24-G1-24R1	24"	JBS24-G1-24R2
JBS36-G1-24R1	36"	JBS36-G1-24R2
JBS48-G1-24R1	48"	IBS48-G1-24R2
JBS72-G1-24R1	72"	JBS72-G1-24R2
JBS96-G1-24R1	96"	JBS96-G1-24R2
JBS120-G1-24R1	120"	JBS120-G1-24R2
JBS144-G1-24R1	144"	JBS144-G1-24R2

Type K with Spade Lugs		Type K with Polarized Plug
Stock Number	<u>Lead Length</u>	Stock Number
KBS24-G1-24R1	24"	KBS24-G1-24R2
KBS36-G1-24R1	36"	KBS36-G1-24R2
KBS48-G1-24R1	48"	KBS48-G1-24R2
KBS72-G1-24R1	72"	KBS72-G1-24R2
KBS96-G1-24R1	96"	KBS96-G1-24R2
KBS120-G1-24R1	120"	KBS120-G1-24R2
KBS144-G1-24R1	144"	KBS144-G1-24R2

Type J Ungrounded with Spade Lugs				
Stock Number	Lead Length			
JBS24-U1-24R1	24"			
JBS36-U1-24R1	36"			
JBS48-U1-24R1	48"			
JBS72-U1-24R1	72"			
JBS96-U1-24R1	96"			
JBS120-U1-24R1	120"			
JBS144-U1-24R1	144"			

#### **Available Options**

- 2 wire or 3 wire RTD
- Type T
- 1/8" diameter probe
- Custom probe length
- Polarized plug or jack
- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- Additional lead lengths available
- Custom orders welcome



# **Adjustable Depth Thermocouples w/Stainless Steel Overbraid (Metric)**

#### **Standard Features**

- Fits metric bayonet adapters
- Metric bayonet cap with two slots
- Grounded construction
- 24 ga. Fiberglass leads w/ SS overbraid
- Spade lugs



#### Dimensions for 4.75 mm diameter probe

- A 4.75 mm Diameter
- **B** 12 mm Diameter
- C App. 6 mm Diameter

#### Dimensions for 8 mm diameter probe

- A 8 mm Diameter
- **B** 14 mm Diameter
- C App. 8 mm Diameter

Туре Ј			Туре К
Stock Number	Lead Length	Cap Size	Stock Number
JBS39-G1-24R1-1	1 meter	12mm	KBS39-G1-24R1-1
JBS78-G1-24R1-1	2 meters	12mm	KBS78-G1-24R1-1
JBS118-G1-24R1-1	3 meters	12mm	KBS118-G1-24R1-1
JBS157-G1-24R1-1	4 meters	12mm	KBS157-G1-24R1-1
JBS39-G1-24R1-2	1 meter	14mm	KBS39-G1-24R1-2
JBS78-G1-24R1-2	2 meters	14mm	KBS78-G1-24R1-2
JBS118-G1-24R1-2	3 meters	14mm	KBS118-G1-24R1-2
JBS157-G1-24R1-2	4 meters	14mm	KBS157-G1-24R1-2

#### **Available Options**

- 2 wire RTD
- 3 wire RTD
- Type T
- Polarized plug or jack

- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- Additional lead lengths available
- Custom orders welcome

# **Fixed Depth Thermocouples**

#### **Standard Features**

- 3/16" diameter probe
- Fits standard bayonet adapters
- 2 1/2" fixed depth

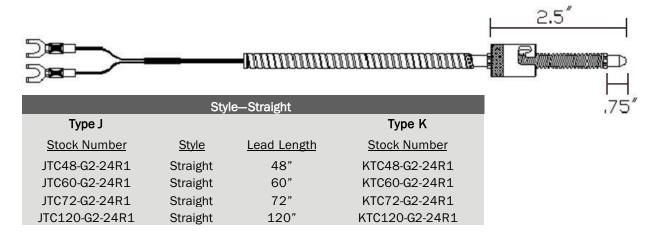
#### **Available Options**

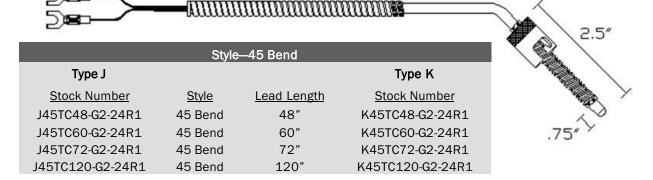
- 2 wire RTD
- 3 wire RTD
- Type T

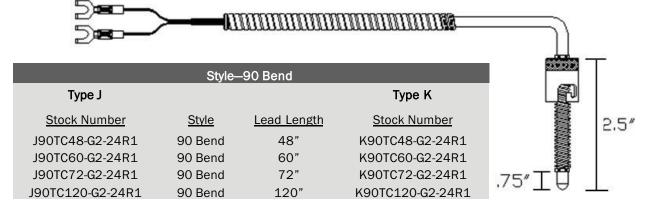
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- 1/8" diameter probe
- Custom probe length

- Grounded construction
- 24 ga. Fiberglass leads with SS armor
- Spade lugs
- Polarized plug or jack
- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- · Additional lead lengths available
- Custom orders welcome







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# **Washer Style Surface Thermocouples**

#### **Standard Features:**

- 3/16" stud size available
- 5/16" stud size available
- 24 ga. Fiberglass leads w/ stainless steel overbraid
- Grounded construction
- Spade lugs

#### **Available Options:**

- 2 wire or 3 wire RTD
- Type T
- Polarized plug or jack
- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- Additional lead lengths available
- Custom orders welcome

3/16" Stud Size			5/16" Stud Size
Stock Number	<u>Type</u>	<u>Lead Length</u>	Stock Number
JWN36-G1-24R1	J	36"	JWQ36-G1-24R1
JWN48-G1-24R1	J	48"	JWQ48-G1-24R1
JWN60-G1-24R1	J	60"	JWQ60-G1-24R1
JWN72-G1-24R1	J	72"	JWQ72-G1-24R1
JWN96-G1-24R1	J	96"	JWQ96-G1-24R1
JWN120-G1-24R1	J	120"	JWQ120-G1-24R1
KWN36-G1-24R1	K	36"	KWQ36-G1-24R1
KWN48-G1-24R1	K	48"	KWQ48-G1-24R1
KWN60-G1-24R1	K	60"	KWQ60-G1-24R1
KWN72-G1-24R1	K	72"	KWQ72-G1-24R1
KWN96-G1-24R1	K	96"	KWQ96-G1-24R1
KWN120-G1-24R1	K	120"	KWQ120-G1-24R1





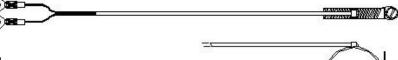
#### **Standard Features:**

- 1/2" wide stainless steel clamp
- 7/16" hexagon & screw drive slot
- 48" 24 ga. Fiberglass leads with stainless steel overbraid
- Spade lugs
- Grounded construction

#### **Available Options:**

- 2 wire or 3 wire RTD
- Type T
- Polarized plug or jack
- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- Custom orders welcome
- Additional lead lengths available

Type J		Type K
Stock Number	Clamping Range	Stock Number
JHC48-G0-24R1	3/8" - 7/8"	KHC48-G0-24R1
JHC48-G1-24R1	11/16" - 1 1/2"	KHC48-G1-24R1
JHC48-G2-24R1	1 9/16" x 2 1/2"	KHC48-G2-24R1
JHC48-G3-24R1	2 1/2" - 3 3/8"	KHC48-G3-24R1
JHC48-G4-24R1	2 13/16" - 3 3/4"	KHC48-G4-24R1
JHC48-G5-24R1	3 9/16" - 4 1/2"	KHC48-G5-24R1
JHC48-G6-24R1	4 5/8" - 5 1/2"	KHC48-G6-24R1
JHC48-G7-24R1	5 5/8" - 6 1/2"	KHC48-G7-24R1





# **Nissei Nozzle Thermocouples**

#### **Standard Features:**

- 30, 40 or 50 mm diameter
- 40 mm will fit 1.5" diameter
- 3/16" wide band
- Spade lugs
- 24 ga. Fiberglass leads with S/S braid
- Grounded construction

#### **Available Options:**

- 2 wire or 3 wire RTD
- Type T
- Polarized plug or jack
- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- Custom diameters and additional lead lengths available

Type J			Type K
Stock Number	<u>Diameter</u>	<u>Lead Length</u>	Stock Number
JNS48-G1-24R1	30mm	48"	KNS48-G1-24R1
JNS72-G1-24R1	30mm	72"	KNS72-G1-24R1
JNS144-G1-24R1	30mm	144"	KNS144-G1-24R1
JNS48-G1.5-24R1	40mm	48"	KNS48-G1.5-24R1
JNS72-G1.5-24R1	40mm	72"	KNS72-G1.5-24R1
JNS144-G1.5-24R1	40mm	144"	KNS144-G1.5-24R1
JNS48-G2-24R1	50mm	48"	KNS48-G2-24R1
JNS72-G2-24R1	50mm	72"	KNS72-G2-24R1
JNS144-G2-24R1	50mm	144"	KNS144-G2-24R1
5 <b>20-</b> 5 <b>20-</b>	<b>—</b> —		
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#### **Standard Features:**

- 1/8" diameter probe
- 1" long x 90 degree bend with spring strain relief
- 24 ga. Fiberglass leads with stainless steel overbraid
- Spade lugs
- Grounded construction

Stock Number	<u>Type</u>
JNB48-G2-24R1	Newbury 48" overall length
JNB72-G2-24R1	Newbury 73" overall length

#### **Available Options:**

- 2 wire or 3 wire RTD
- Type T
- Polarized plug or jack
- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- Additional lead lengths available
- Custom orders welcome



Quick service on custom orders

# **Shallow Nozzle Thermocouples**

#### **Standard Features**

- 1/4-28 N F thread
- 24 ga. Fiberglass leads w/ SS braid
- Spade lugs
- Grounded construction

Type J					Type K
Stock Number	<u>Lead</u> <u>Length</u>	Thread Size	Dimension (A)	Dimension (B)	Stock Number
JNZ48-G1-24R1	48	1/4-28 NF	.375	.455	KNZ48-G1-24R1
JNZ72-G1-24R1	72	1/4-28 NF	.375	.455	KNZ72-G1-24R1



#### **Available Options**

- M6 x 1 thread
- M8 x 1.25 thread
- 2 wire or 3 wire RTD
- Type T
- Polarized plug or jack

- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- · Additional lead lengths available
- Custom orders welcome

# **Shim Style Surface Thermocouples**

#### **Standard Features**

- Stainless steel shim
- 24 ga. Fiberglass leads w/SS braid
- Spade lugs
- Grounded construction

Type J		Type K
Stock Number	<u>Lead Length</u>	Stock Number
JSH48-G1-24R1	48	KSH48-G1-24R1
JSH72-G1-24R1	72	KSH72-G1-24R1



#### **Available Options**

- 2 wire RTD
- 3 wire RTD
- Type T
- Polarized plug or jack
- Mini plug or jack
- Ungrounded construction
- 20 ga. Lead wire
- · Additional lead lengths available
- Custom orders welcome

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# **Bendable Probe Thermocouples**

#### **Standard Features**

- 1/8" or 3/16" diameter probe
- 6" and 12" probe lengths
- 24 ga. Fiberglass leads w/ SS armor
- Spade lugs

Type J	Also available i	n 1/8" prot	oe diameter	Туре К
Stock Number	Probe Length	<u>Probe</u> <u>Diameter</u>	Lead Length	Stock Number
JBPD48-G6-24R1	6"	3/16"	48"	KBPD48-G6-24R1
JBPD72-G6-24R1	6"	3/16"	72"	KBPD72-G6-24R1
JBPD120-G6-24R1	6"	3/16"	120"	KBPD120-G6-24R1
JBPD48-G12-24R1	12"	3/16"	48"	KBPD48-G12-24R1
JBPD72-G12-24R1	12"	3/16"	72"	KBPD72-G12-24R1
JBPD120-G12-24R1	12"	3/16"	120"	KBPD120-G12-24R1

1/8" NPT Compression Fitting Supplied





#### **Available Options**

- 2 wire RTD
- 3 wire RTD
- Type T
- Polarized plug or jack
- Mini plug or jack

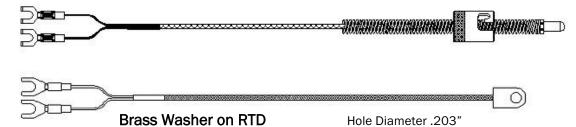
- Ungrounded construction
- 20 ga. Lead wire
- Additional lead lengths available
- Additional probe lengths available
- · Custom orders welcome

# **RTD Sensors**

#### **Standard Features**

- 2 wire or 3 wire
- Flexible probe
- Adjustable depth up to 10"
- Stainless steel braid
- Spade lugs
- RTD probe also available in other TC styles

Stock Number	<u>Lead Length</u>
RTDBS120-G1-24R1	120
RTDBS144-G1-24R1	144
RTDBS24-G1-24R1	24
RTDBS48-G1-24R1	48
RTDBS72-G1-24R1	72
RTDBS96-G1-24R1	96



10 Quality Products in Stock or Special Order

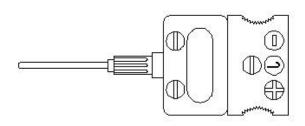
# **Mineral Insulated Elements**

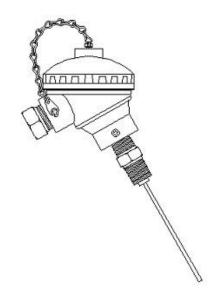
Mineral Insulated Thermocouples are manufactured at Marathon Heater to address your higher temperature requirements. Since the calibration wire is encased within a metal sheath packed with magnesium oxide the thermocouples can withstand higher temperatures and depending on the application will last longer since they are more durable. One excellent feature of Mineral Insulated Thermocouples is faster response time.



#### **Design Options**

- .040", .062", .125" and .187" diameter
- Grounded or ungrounded junction
- Type J or K calibration
- 304 stainless sheath or Inconel 600
- High pressure and high temperature rated
- Spade lugs, lead wires, plugs and jacks
- Flip-top housings, 2 or 4 pole





Below is a chart of suggested maximum temperatures that can assist you in selecting the proper thermocouple for your application.

304 SS and 316 SS				
<u>Diameter</u>	<u>J</u>	<u>K</u>		
.040"	500 F	1290 F		
.062'	825 F	1650 F		
.125"	970 F	1650 F		
.187"	1150 F	1650 F		
.250"	1330 F	1650 F		
.375"	1330 F	1650 F		

Inconel 60	0	
<u>Diameter</u>	Ī	<u>K</u>
.040"	750 F	1650 F
.062'	1000 F	1850 F
.125"	1250 F	2000 F
.187"	1400 F	2200 F
.250"	1400 F	2200 F
.375"	1400 F	2200 F

# **Hot Melt Nozzle Thermocouples**

For direct temperature readings of hot plastic melt inside the nozzle.

#### **Standard Features**

- Style F mounts flush with internal nozzle bore
- Style M protrudes 1/4" into melt stream
- 3/8-24 thread
- 48" 24 ga. Teflon leads with stainless steel armor
- Supplied with lava seal

#### **Available options**

- Type J, Type K
- Polarized plugs or jacks
- Mini plugs or jacks
- 24 gauge lead wire at desired lengths

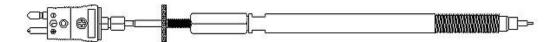


# **Retractable Melt Bolt Thermocouples**

Retractable Melt Bolts offer an adjustable immersion depth during full operation at maximum flow rates and pressures. Thermocouple junction can be centered in hot melt stream. Maximum temperature rating of 900 F.

#### **Standard Features**

- Available in 3", 5" or 7" lengths
- 1/8" Diameter MGO tip
- 1/2-20 UNF thread
- Grounded, exposed or ungrounded junctions available
- Type J or K calibration
- High pressure & high temperature rated
- RTD Style available
- Immersion available from 1/8" to 1"
- Polarized plug or jack
- Replacement elements available



# **Cartridge Type Thermocouples**

#### **Standard Features**

- Side sensing design
- .184"" diameter x 1" long SS probe

#### **Available options**

- Type J, Type K, Type T
- 2 or 3 wire RTD
- 24 gauge lead wire at desired lengths
- Polarized plugs or jacks
- Mini plugs or jacks

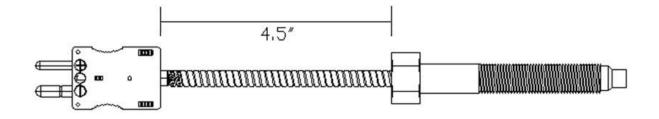
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# **Fixed Melt Bolt Thermocouples**

#### **Standard Features**

- 1/8" diameter MGO tip
- Grounded junction
- High pressure and temperature rated
- Rigid or flexible
- 1/2–20 UNF thread
- Polarized plug or jack
- Custom lead lengths available

Flexible Extension			
Type J			Type K
Stock Number	Body Length	Tip Length	Stock Number
JMBF3-GA-24R2	3"	Flush	KMBF3-GA-24R2
JMBF3-GB-24R2	3"	1/8"	KMBF3-GB-24R2
JMBF3-GC-24R2	3"	3/16"	KMBF3-GC-24R2
JMBF6-GA-24R2	6"	Flush	KMBF6-GA-24R2
JMBF6-GB-24R2	6"	1/8"	KMBF6-GB-24R2
JMBF6-GC-24R2	6"	3/16"	KMBF6-GC-24R2
JMBF9-GA-24R2	9"	Flush	
JMBF9-GB-24R2	9"	1/8"	
JMBF9-GC-24R2	9"	3/16"	

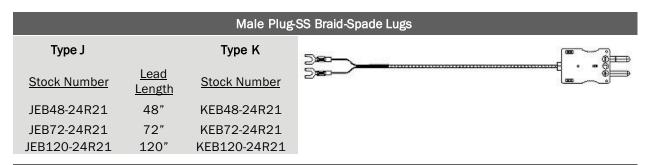


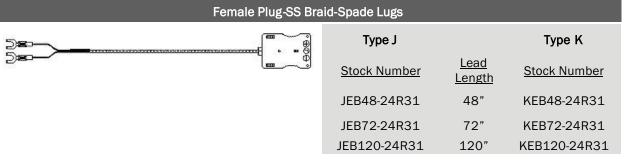
	Rigid Extension				
Type J			Type K		
Stock Number	Body Length	Tip Length	Stock Number		
JMBR3-GA-24R2	3"	Flush	KMBR3-GA-24R2		
JMBR3-GB-24R2	3"	1/8"	KMBR3-GB-24R2		
JMBR3-GC-24R2	3"	3/16"	KMBR3-GC-24R2		
JMBR6-GA-24R2	6"	Flush	KMBR6-GA-24R2		
JMBR6-GB-24R2	6"	1/8"	KMBR6-GB-24R2		
JMBR6-GC-24R2	6"	3/16"	KMBR6-GC-24R2		
JMBR9-GA-24R2	9"	Flush			
JMBR9-GB-24R2	9"	1/8"			
JMBR9-GC-24R2	9"	3/16"			

# Thermocouple Extensions with Stainless Steel Braid

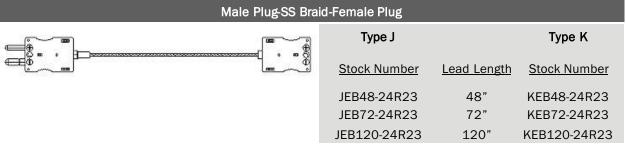
#### Note: Extensions available w/SS Armor under part# prefix JEA & KEA

Standard Features: 24 gage Fiberglass wire





		Male Plug	-SS Braid-Male Plug
Type J		Type K	
Stock Number	<u>Lead</u> <u>Length</u>	Stock Number	
JEB48-24R22	48"	KEB48-24R22	
JEB72-24R22	72"	KEB72-24R22	
JEB120-24R22	120"	KEB120-24R22	



		Female Plug-S	S Braid-Female Plug
Type J		Туре К	
Stock Number	<u>Lead</u> <u>Length</u>	Stock Number	
JEB48-24R33	48"	KEB48-24R33	
JEB72-24R33	72"	KEB72-24R33	
JEB120-24R33	120"	KEB120-24R33	

# 14 100's of stock items for immediate delivery

# **Thermocouple Accessories**

Thermocouple Wire			
Type J		Type K	
<u>Part Number</u>	<u>Description</u>	<u>Part Number</u>	
TWJ20GG	20 ga. Stranded Duplex Glass over Glass	TWK20GG	
TWJ20GGS	20 ga. Stranded Duplex Glass over Glass with SS overbraid	TWK20GGS	
TWJ20TTS	20 ga. Stranded Duplex Teflon over Teflon with SS overbraid	TWK20TTS	
TWJ24GG	24 ga. Stranded Duplex Glass over Glass	TWK24GG	
TWJ24GGS	24 ga. Stranded Duplex Glass over Glass with SS overbraid	TWK24GGS	
TWJ24TTS	24 ga. Stranded Duplex Teflon over Teflon with SS overbraid	TWK24TTS	

Polarized Plugs and Jacks			
	Type J	Type K	RTD
<u>Description</u>	<u>Part Number</u>	<u>Part Number</u>	Part Number
Standard Plug	TPH10J	TPH10K	TPH10RTD
Standard Jack	TPH20J	TPH20K	TPH20RTD
Mini Plug	TPH110J	TPH110K	
Mini Jack	TPH21J	TPH21K	

# **Bayonet Caps and Springs**

<u>Part Number</u>	<u>Description</u>
<u>TP502</u>	1/4 x 28 bolt and spring
TP060	Bayonet Cap for Type AC —Adjustable Conduit
TP501	Bayonet Cap and Spring (combination) for Type BS—Adjustable Braid
TP058	Bayonet Cap for Type TC —Fixed Depth Conduit
TP061	14mm Bayonet Cap
TP072	12mm Bayonet Cap
TPH435	Spring for Metric Caps
TPH44071	7/8" x 1/8" NPT Bayonet Adapter

# **Compression Fittings**

Brass Compression Fittings with 1/8" NPT		Transition Fittings	
<u>Part Number</u>	<u>Description</u>	Part Number	<u>Description</u>
BH111	Fits 1/8" diameter probe	TP046	1/8"
BH112	Fits 3/16" diameter probe	TP085	3/16"
BH113	Fits 1/4" diameter probe	TP082	1/4"

Melt Bolt Blanks	;	Retractable Me	elt Bolts
Part Number	<u>Description</u>	<u>Part Number</u>	<u>Description</u>
MB101-3	3" Long Melt Bolt Blank	RMB102-3	3.5" Retractable Melt Bolt
MB101-6	6" Long Melt Bolt Blank	RMB102-5	5.75" Retractable Melt Bolt
MB101-9	9" Long Melt Bolt Blank	RMB102-7	7.75" Retractable Melt Bolt

# **Contact Sales for More Accessories Information**



# **OTHER PRODUCTS**



#### **Air Heaters**

Marathon manufactures and stocks 1/2" diameter air heaters with various terminations and configurations.



#### **OEM Replacement Heaters**

Marathon manufactures and stocks high quality and competitive priced replacement heaters for a variety of OEM equipment.



#### **Temperature Controllers**

Microprocessor based temperature controllers for all applications and price ranges.



#### **Stock Coil Heaters**

I deal for high temperature and high watt density applications.



#### **Mica Band Heaters**

heaters and nozzle heaters in a variety of sizes and configurations.



#### **Cartridge Heaters**

Marathon specializes in custom manufactured cartridge heaters and also carries a wide variety of stock cartridge heaters.

# MARATHON HEATER

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