

# Mercotac<sup>®</sup>

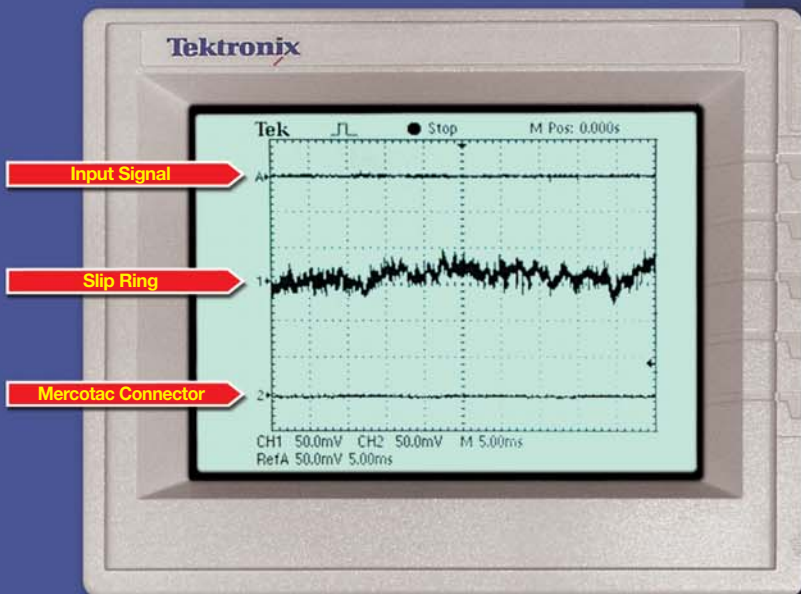
*Superior Connections for a World in Motion*



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# Do you want a superior connection or an ordinary slip ring?

## The choice is yours.



- Superior to Conventional Slip Rings
- Extremely Low Electrical Noise
- Less Than One Milliohm Resistance
- Durable, Compact, Low Cost

**There are many ways you will profit by using Mercotac connectors:**

Slip rings require maintenance and lose signal quality over time due to wear and debris. **Mercotac connectors are maintenance free, do not degrade the signal over time and last much longer than slip rings.**

Slip rings introduce electrical noise into the signal being transmitted. **Mercotac connectors transmit with near zero electrical noise, thus the same connector can be used for power and signal transmission.**

Slip rings typically last several million revolutions. **Mercotac connectors typically last hundreds of millions of revolutions. In many applications they can last over a billion revolutions.**

Though superior in performance and durability, **Mercotac connectors cost less than slip rings** of comparable capacity.

The above **superior performance is possible** because of the unique design feature of Mercotac connectors: the electrical conduction path is a liquid metal that is molecularly bonded to the contacts. This creates a connection that is constant and unchanged for the life of the connector.



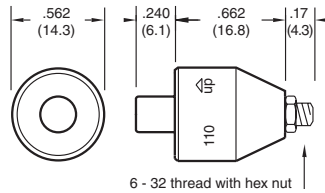
**Rotating Electrical Connectors**  
*Superior Connections for a World in Motion*

# SINGLE CONDUCTOR

## 1 Conductor, 10 Amp

## Model 110

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
110	1	Standard Model	N/A	10	200	<1m?	3600	140(60)/-20(-29)	35	N/A
110-SS	1	Stainless Steel Bearing	N/A	10	200	<1m?	3600	140(60)/-20(-29)	35	N/A
110-L	1	Low Torque	N/A	10	200	<1m?	1200	140(60)/-20(-29)	10	N/A



Inch (mm)

### Accessories



5920 one contact receptacle



5921-S one contact receptacle w/ 6" wire



5952 one contact cap w/solder lug



55337 ring terminal (12-10 AWG)

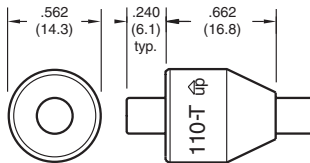
Receptacle used for mounting to rotating device.

Accessories required for wire connections. Order Separately

## 1 Conductor, 10 Amp

## Model 110-T

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
110-T	1	Standard Model	N/A	10	200	<1m?	3600	140(60)/-20(-29)	35	N/A
110-TS	1	Stainless Steel Bearing	N/A	10	200	<1m?	3600	140(60)/-20(-29)	35	N/A
110-TL	1	Low Torque	N/A	10	200	<1m?	1200	140(60)/-20(-29)	10	N/A
105	1	High Temp. High RPM	N/A	4	200	<1m?	Call for Specifications		N/A	
105-SS	1	Stainless Steel Bearing	N/A	4	200	<1m?	Call for Specifications		N/A	



Inch (mm)

### Accessories



5920 one contact receptacle



5921-S one contact receptacle w/ 6" wire



5952 one contact cap w/solder lug

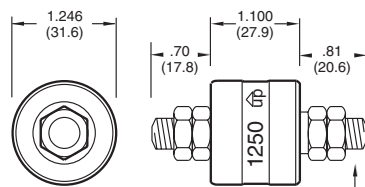
Receptacle used for mounting to rotating device.

Accessories required for wire connections. Order Separately

## 1 Conductor, 250 Amp

## Model 1250

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
1250	1	Standard Model	N/A	250	200	<1m?	1200	140(60)/-20(-29)	250	N/A
1250-SS	1	Stainless Steel Bearing	N/A	250	200	<1m?	1200	140(60)/-20(-29)	250	N/A
1250-M	1	Metric Thread (10x1.5)	N/A	250	200	<1m?	1200	140(60)/-20(-29)	250	N/A
1250-MS	1	Metric Thread & Stainless Steel Bearing	N/A	250	200	<1m?	1200	140(60)/-20(-29)	250	N/A
1250-SX	1	Stainless Steel Body & Bearing	N/A	250	200	<1m?	1200	140(60)/-20(-29)	250	N/A
1250-MSX	1	Metric Thd., Stainless Steel Body & Bearing	N/A	250	200	<1m?	1200	140(60)/-20(-29)	250	N/A



### Accessories



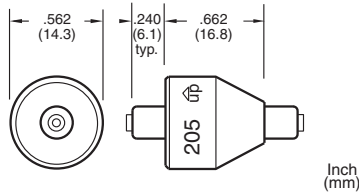
57125 Boot Kit For dust and splash protection IP51

## 2 & 3 CONDUCTORS

### 2 Conductors, 4 Amp

### Model 205

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
205	2	Standard Model	0-250	4	200	<1m	2000	140(60)/45(7)	75	>25M
205-SS	2	Stainless Steel Bearing	0-250	4	200	<1m	2000	140(60)/45(7)	75	>25M
205-L	2	Low Torque/Low Temp.	0-250	4	200	<1m	1200	140(60)/-20(-29)	20	>25M
205-LS	2	Low Temp. Stainless Steel Bearing	0-250	4	200	<1m	1200	140(60)/-20(-29)	75	>25M
205-H	2	High RPM	0-250	4	200	<1m	3600	140(60)/45(7)	35	>25M
205-HS	2	High RPM, Stainless steel bearing	0-250	4	200	<1m	3600	140(60)/45(7)	35	>25M



### Accessories



591 two contact receptacle w/ one 6" wire



592 two contact receptacle w/ two 6" wires



594 two contact receptacle w/ two solder holes



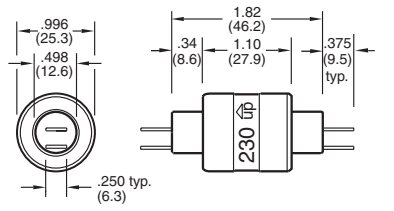
595 two contact cap w/solder lugs

Receptacle used for mounting to rotating device.  
Accessories required for wire connections. Order Separately

### 2 Conductors, 30 Amp

### Model 230

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
230	2	Standard Model	0-250	30	200	<1m	1800	140(60)/-20(-29)	200	>25M
230-SS	2	Stainless Steel Bearing	0-250	30	200	<1m	1800	140(60)/-20(-29)	200	>25M



### Accessories



55251 Terminal 16-14 AWG (qty. 2 included)



57230 Boot Kit For dust and splash protection IP51



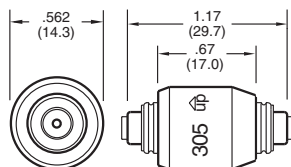
55250 Terminal 16-14 AWG (qty. 2 included)

Terminals for other wire gauges available.

### 3 Conductors, 4 Amp

### Model 305

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
305	3	Stainless Steel Bearing Standard	0-250	4	200	<1m	1800	140(60)/45(7)	100	>25M
305-L	3	Low Temperature	0-250	4	200	<1m	1000	140(60)/-20(-29)	100	>25M



### Accessories



593 three contact receptacle w/ three 6" wires



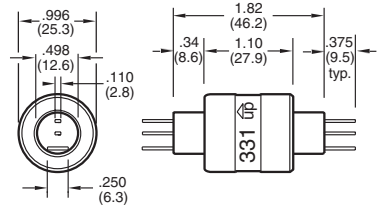
553 three contact cap w/solder lugs

Receptacle used for mounting to rotating device.  
Accessories required for wire connections. Order Separately

3 Conductors, Combination 4 Amp & 30 Amp

Model 331

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
331	3	Standard Model	0-250	2 @ 4/1 @ 30	100	<1m?	1800	140(60)/-20(-29)	200	>25M?
331-SS	3	Stainless Steel Bearing	0-250	2 @ 4/1 @ 30	100	<1m?	1800	140(60)/-20(-29)	200	>25M?



Inch (mm)

Accessories



55251 Terminal  
16-14 AWG (qty. 1 included)



57230 Boot Kit  
For dust and splash protection IP51



55250 Terminal  
16-14 AWG (qty. 1 included)



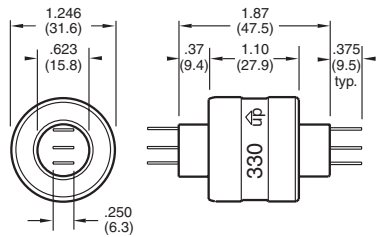
55110 Terminal  
22-18 AWG (qty. 4 included)

Terminals for other wire gauges available.

3 Conductors, 30 Amp

Model 330

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
330	3	Standard Model	0-250	30	100	<1m?	1200	140(60)/-20(-29)	300	>25M?
330-SS	3	Stainless Steel Bearing	0-250	30	100	<1m?	1200	140(60)/-20(-29)	300	>25M?



Inch (mm)

Accessories



55251 Terminal  
16-14 AWG (qty. 3 included)



57430 Boot Kit  
For dust and splash protection IP51



55253 Shrink Tube  
(qty. 3 included)



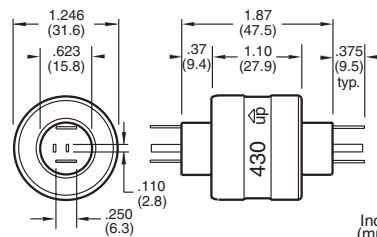
55252 Terminal  
16-14 AWG (qty. 3 included)

Terminals for other wire gauges available.

4 Conductors, Combination 4 Amp & 30 Amp

Model 430

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
430	4	Standard Model	0-250	2 @ 4/2 @ 30	100	<1m?	1200	140(60)/-20(-29)	400	>25M?
430-SS	4	Stainless Steel Bearing	0-250	2 @ 4/2 @ 30	100	<1m?	1200	140(60)/-20(-29)	400	>25M?



Inch (mm)

Accessories

50431 Plug Assembly  
12 in. wires, 14 AWG & 18 AWG  
Suitable for up to 20 Amps



50430 Plug Kit  
no wires, terminals for wire gauges  
20-16 AWG & 16-14 AWG  
Suitable for up to 20 Amps  
Also order 5030-T

55110 qty 4, 22-18 AWG



55251 qty 2,  
16-14 AWG



5030-T Plug Terminal Crimping Tool

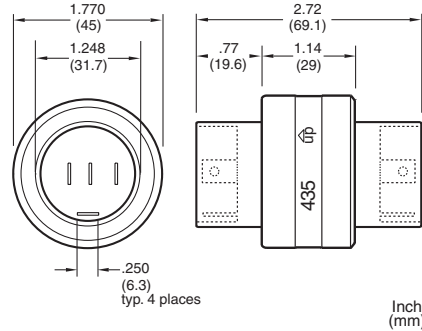
55250 qty 2, 16-14 AWG



# 4, 6 & 8 CONDUCTORS

## Model 435

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 500 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
435	4	High Voltage Model	0-500	30	100	<1m?	300	140(60)/-20(-29)	850	>50M?
435-SS	4	High Voltage Stainless Steel Bearing	0-500	30	100	<1m?	300	140(60)/-20(-29)	850	>50M?



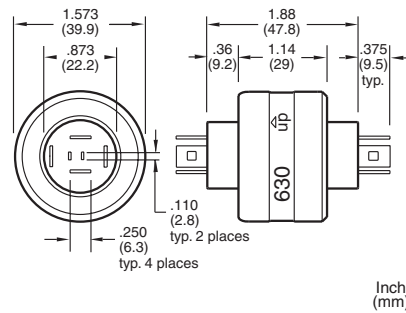
### Accessories



Terminals for other wire gauges available.

## Model 630

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
630	6	Standard Model	0-250	2@4/4@30	100	<1m?	300	140(60)/-20(-29)	700	>25M?
630-SS	6	Stainless Steel Bearing	0-250	2@4/4@30	100	<1m?	300	140(60)/-20(-29)	700	>25M?



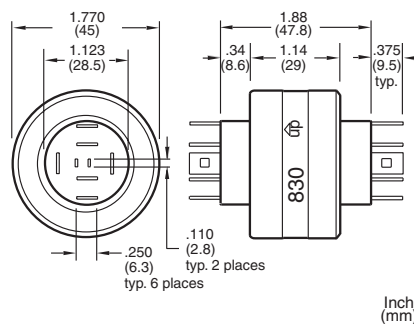
### Accessories



Terminals for other wire gauges available.

## Model 830

MODEL NO.	CONDUCTORS	DESCRIPTION	VOLTAGE AC/DC	AMP RATING AT 240 VAC	MAX FREQ. MHz	CONTACT RESISTANCE	MAX OP. RPM	TEMPERATURE Max. F (C) / Min. F (C)	ROTATION Torque (gm-cm)	CIRCUIT SEPARATION
830	8	Standard Model	0-250	2@4/6@30	100	<1m?	200	140(60)/-20(-29)	1000	>25M?
830-SS	8	Stainless Steel Bearing	0-250	2@4/6@30	100	<1m?	200	140(60)/-20(-29)	1000	>25M?



### Accessories



Terminals for other wire gauges available.



### MOUNTING

- Mercotac connectors may be used in any position between vertical and 90 horizontal. The UP arrow should not point below horizontal.
- The models 110, 110-T, 205, and 305 Mercotacs use the knurled receptacle inserted into the rotating member for mounting. This receptacle holds the Mercotac connector.
- Larger Mercotac connectors use either the body or the plastic collar for mounting to the rotating member.
- In horizontal applications, mount the connector with the body rotating to reduce mechanical loads on the bearing.
- Limit mounting eccentricity to a maximum of .005" TIR.
- Mercotac connectors are not designed to carry mechanical loads. One end should be allowed to float, attached only by the connecting wires.

### CONNECTION

- Use stranded wires of ample length and flexibility for the Mercotac connection in order to avoid mechanical loads.
- Terminal Accessories are push-on quick disconnects which crimp onto the connecting wires and push onto the Mercotac connector tabs.
- Do not solder wires to the connector or bend tabs as such misuse will cause connector failure and void the warranty.
- Provide overload protection to the electrical circuit containing the Mercotac connector.
- If wire wrapping occurs from too much connector torque, it is suggested to use a torque arm positioned to float against a fixed stop.

### TEMPERATURE

- Provide thermal insulation where necessary to prevent the Mercotac temperature from exceeding 140F (60C). Mercotac connectors contain plastic materials which are sensitive to heat.
- Overheating will cause connector failure and voids the warranty.

### VIBRATION/ SHOCK

- Vibration or mechanical shock will reduce connector life or cause failure.
- If vibration or shock is present, we suggest a flexible isolating mounting.

### FOOD APPLICATIONS

- Mercotac connectors are factory sealed but do contain mercury and other fluids.
- As a precaution, a protective housing is suggested to isolate the rotating connector from the food product.

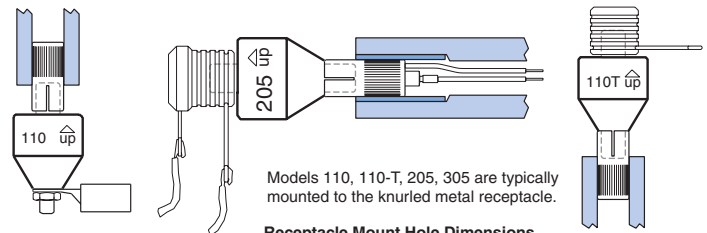
### BOOT KIT

- The boot kit is not watertight or intended for waterproofing but is designed to give protection to the wire terminals from splashing water or dust. The protection rating is IP51.

### RECYCLING

Mercotac connectors contain mercury and should not be disposed of in the trash but only through mercury recycling programs. Mercotac Inc. offers a mercury recycling service for this purpose. Ship spent connectors to our Carlsbad facility by UPS ground enclosed in a plastic bag. Include paperwork stating, "for recycling" with your company name, phone and fax numbers. Do not send through the US mail.

### Suggested Mounting Methods



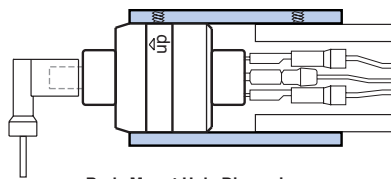
Models 110, 110-T, 205, 305 are typically mounted to the knurled metal receptacle.

Receptacle Mount Hole Dimensions

MODEL	HOLE DIAMETER Ø	DEPTH
591, 592, 5920, 594	.283" (7.19)	.35" (8.89)
593	.408" (10.36)	.35" (8.89)

Inch (mm) Tolerances Ø  $+0.011^{+0.025}$   $-0.000^{-0.000}$

### Typical Body Mount

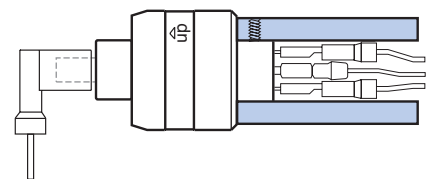


Body Mount Hole Dimensions

MODEL	HOLE DIAMETER Ø	DEPTH*
230, 331	.998" (25.35)	.80" (20)
330, 430, 1250	1.248" (31.70)	.80" (20)
630	1.575" (40.00)	.80" (20)
435, 830	1.772" (45.00)	.80" (20)

Inch (mm) Tolerances Ø  $+0.011^{+0.025}$   $-0.000^{-0.000}$   
 \*Minimum additional depth for disconnects clearance 1.4" (35.5)

### Typical Collar Mount

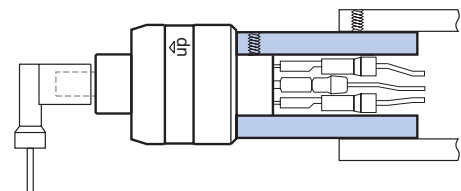


Collar Mount Hole Dimensions

MODEL	HOLE DIAMETER Ø	DEPTH*
230, 331	.500" (12.70)	.40" (10)
330, 430	.625" (15.88)	.40" (10)
430 w/plug	.625" (15.88)	1.40" (36)
630	.875" (22.23)	.40" (10)
830	1.125" (28.58)	.40" (10)
435	1.250" (31.75)	.80" (20)
1250 Stud	3/8"-16 UNC	.81" (20.5)
1250-M Stud	10X1.5 metric	.81" (20.5)

Inch (mm) Tolerances Ø  $+0.011^{+0.025}$   $-0.000^{-0.000}$   
 \*Minimum additional depth for disconnects clearance 1.4" (35.5)

### Insulating Collar Mount



Mounting with an insulating collar may be required to insulate connector from conducted heat. Soft-mounting with rubber type material is needed if unit will be subjected to vibration.