



GRACE INERTIA CONNECTOR SERIES

POWER SOLUTIONS SUPPORTING VARIOUS PITCH OPTIONS

TE Connectivity's (TE) GRACE INERTIA connector series offers the design-in variety needed for always-on connectivity. GRACE INERTIA connectors employ an inertia locking mechanism to simultaneously complete the circuit and "lock" the connector, which is an excellent solution for helping to eliminate human error during assembly. This feature can improve mating reliability, helps prevent mismatching, and can reduce the need for complicated inspection processes. These wire-to-board and wire-to-wire connectors can be used in a wide range of applications ranging from home appliances and air conditioners to transportation solutions.

ELECTRICAL

- Rated Current: 4A-20A
- Voltage Rating: 250V-600V

MECHANICAL

- Centerline (mm): 3.3-12.4
- Number of Positions: 2-14
- Wire Size: 12-28 AWG

MATERIALS

- Operating Temperature (°C): -30 to +105
- Housing Flammability Ratings: UL 94 V-0 and GWT*
- Contact: Copper Alloy
- UL certified E28476

LEARN MORE

- [Product Page](#)

KEY FEATURES

- Design assures proper insertion, helping to prevent header pin deformation
- Inertia locking mechanism helps prevent unintended disconnection
- Lanceless contacts help prevent snagging or entanglement
- Double poka-yoke design with color and keying
- Dual beam contact design provides good contact and durability
- Ergonomic design allows easy assembly
- Optional double lock plates (TPA devices) available for some models
- Housing Flammability Ratings: UL 94 V-0 and/or Glow Wire Test (GWT)*
- cURus Recognized

APPLICATIONS



Washing
machines



Household
appliances



Air
conditioners



Refrigerators



Control
cabinets



Industrial
controls



Industrial
machinery



HVAC
systems



Urethane coating
on PCB boards



Transportation
solutions

*GWT refers to glow wire testing. For more information on glow wire testing please review the white paper [Glow Wire Testing for the Appliance Industry](#) or visit the [Glow Wire Capable Connectors product page](#)

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GRACE INERTIA CONNECTOR SERIES OVERVIEW

Centerline (mm)	Current Rating (A)	Voltage Rating	Wire Size (AWG)	Positions	Configurations	108 Specification	114 Specification
3.3	4	250 VAC	28-20	4-14	Wire-to-Board	108-106094	114-106094
3.5	7	300 VAC	26-18	2-12	Wire-to-Wire	108-5810	114-5306
5.8	15	600 VAC	16-14	3	Wire-to-Wire	108-106515	114-106515
6.0	10	300 VAC	24-16	2,3	Wire-to-Board	108-106193	114-5292
6.2	20	600 VAC	16-12	1,2,3	Wire-to-Wire	108-5979	114-5356
6.5	10	300 VAC	24-16	3	Wire-to-Board	108-5990	114-5292
7.92	10	300 VAC	24-16	2	Wire-to-Board	108-5990	114-5292
9.0	20	600 VAC	16-12	3	Wire-to-Board	108-78357	114-5356
12.4	20	600 VAC	16-12	2	Wire-to-Board	108-78232	114-5356

WIRE-TO-BOARD CONFIGURATIONS

Centerline (mm)	Positions	Color	Key	Plug Housing	Header Assembly
3.3	4P	Natural	A	1-1971905-2	1-1971906-2
3.3	4P	Blue	B	2-1971905-2	2-1971906-2
3.3	4P	Red	C	3-1971905-2	3-1971906-2
3.3	4P	Yellow	D	4-1971905-2	4-1971906-2
3.3	6P	Natural	A	1-1971905-3	1-1971906-3
3.3	6P	Blue	B	2-1971905-3	2-1971906-3
3.3	6P	Red	C	3-1971905-3	3-1971906-3
3.3	6P	Yellow	D	4-1971905-3	4-1971906-3
3.3	8P	Natural	A	1-1971905-4	1-1971906-4
3.3	8P	Blue	B	2-1971905-4	2-1971906-4
3.3	8P	Red	C	3-1971905-4	3-1971906-4
3.3	8P	Yellow	D	4-1971905-4	4-1971906-4
3.3	10P	Natural	A	1-1971905-5	1-1971906-5
3.3	10P	Blue	B	2-1971905-5	2-1971906-5
3.3	10P	Red	C	3-1971905-5	3-1971906-5
3.3	10P	Yellow	D	4-1971905-5	4-1971906-5
3.3	12P	Natural	A	1-1971905-6	1-1971906-6
3.3	12P	Blue	B	2-1971905-6	2-1971906-6
3.3	12P	Red	C	3-1971905-6	3-1971906-6
3.3	12P	Yellow	D	4-1971905-6	4-1971906-6
3.3	14P	Natural	A	1-1971905-7	1-1971906-7
3.3	14P	Blue	B	2-1971905-7	2-1971906-7

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Centerline (mm)	Positions	Color	Key	Plug Housing	Header Assembly
3.3	14P	Red	C	3-1971905-7	3-1971906-7
3.3	14P	Yellow	D	4-1971905-7	4-1971906-7
6.0	2P	Natural	A	2-2232875-1	2-2232876-1
6.0	3P	Natural	A	3-2232875-1	3-2232876-1
6.5	3P	Natural	A	1747047-1	1747049-1
6.5	3P	Red	B	1-1747047-2	1-1747049-2
6.5	3P	Blue	C	2-1747047-3	2-1747049-3
6.5	3P	Yellow	D	3-1747047-4	3-1747049-4
7.92	2P	Natural	A	1747050-1	1747052-1
7.92	2P	Red	B	1-1747050-2	1-17470502-2
7.92	2P	Blue	C	2-1747050-3	2-1747052-3
7.92	2P	Yellow	D	3-1747050-4	3-1747052-4
9.0	3P	Natural	-	1903414-2	1903415-1
9.0	3P	Red	-	1-1903414-2	1-1903415-1
9.0	3P	Blue	-	2-1903414-2	2-1903415-1
9.0	3P	Black	-	4-1903414-2	4-1903415-1
12.4	2P	Natural	A	1747995-1	1747996-1
12.4	2P	Red	B	1747995-2	1747996-2
12.4	2P	Blue	C	1747995-3	1747996-3
12.4	2P	Yellow	D	1747995-4	1747996-4

WIRE-TO-WIRE CONFIGURATIONS

Centerline (mm)	Positions	Color	Key	Plug Housing	Cap Housing
3.5	2P	Natural	A	1565081-1	1565085-1
3.5	2P	Red	B	1-1565081-2	1-1565085-2
3.5	2P	Blue	C	2-1565081-3	2-1565085-3
3.5	2P	Yellow	D	3-1565081-4	3-1565085-4
3.5	2P	Dark Gray	E	4-1565081-1	4-1565085-1
3.5	2P	Brown	F	4-1565081-2	4-1565085-2
3.5	2P	Violet	G	4-1565081-3	4-1565085-3
3.5	2P	Orange	H	4-1565081-4	4-1565085-4
3.5	2P	Natural	A	1-1565081-1	1-1565085-1
3.5	2P	Red	B	1-1565081-3	1-1565085-3
3.5	2P	Blue	C	2-1565081-4	2-1565085-4
3.5	2P	Yellow	D	3-1565081-5	3-1565085-5
3.5	3P	Natural	A	1565082-1	1565086-1
3.5	3P	Red	B	1-1565082-2	1-1565086-2
3.5	3P	Blue	C	2-1565082-3	2-1565086-3
3.5	3P	Yellow	D	3-1565082-4	3-1565086-4

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Centerline (mm)	Positions	Color	Key	Plug Housing	Cap Housing
3.5	4P	Natural	A	1565083-1	1565087-1
3.5	4P	Red	B	1-1565083-2	1-1565087-2
3.5	4P	Blue	C	2-1565083-3	2-1565087-3
3.5	4P	Yellow	D	3-1565083-4	3-1565087-4
3.5	6P	Natural	A	1565084-1	1565088-1
3.5	6P	Red	B	1-1565084-2	1-1565088-2
3.5	6P	Blue	C	2-1565084-3	2-1565088-3
3.5	6P	Yellow	D	3-1565084-4	3-1565088-4
3.5	8P	Natural	A	2357089-1	2357090-1
3.5	8P	Red	B	1-2357089-2	1-2357090-2
3.5	8P	Blue	C	2-2357089-3	2-2357090-3
3.5	8P	Yellow	D	3-2357089-4	3-2357090-4
3.5	10P	Natural	A	2357092-1	2357093-1
3.5	10P	Red	B	1-2357092-2	1-2357093-2
3.5	10P	Blue	C	2-2357092-3	2-2357093-3
3.5	10P	Yellow	D	3-2357092-4	3-2357093-4
3.5	12P	Natural	A	2357095-1	2357096-1
3.5	12P	Red	B	1-2357095-2	1-2357096-2
3.5	12P	Blue	C	2-2357095-3	2-2357096-3
3.5	12P	Yellow	D	3-2357095-4	3-2357096-4
5.8	3P	Natural	-	2365950-1	2365949-1
6.2	1P	Natural	A	1903683-1 **	1903684-1 **
6.2	1P	Yellow	B	1-1903683-2 **	1-1903684-2 **
6.2	1P	Blue	C	2-1903683-3 **	2-1903684-3 **
6.2	1P	Red	D	3-1903683-4 **	3-1903684-4 **
6.2	2P	Natural	A	1746975-1 **	1746977-1 **
6.2	3P	Natural	A	1871867-1 **	1746978-1 **
6.2	3P	Natural	A	4-1871867-1	4-1746978-1

** TPA is not available

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APPLICABLE RECEPTACLE & TAB TERMINALS

Centerlines (mm)	Part Number	Type	Wire Size AWG	Applicator	Hand Tool
3.3	1971795-1	Receptacle	28-26	2151948-1	-
3.3	1983780-1	Receptacle	24-20	2151949-1	-
3.5	1612334-1	Receptacle	26-22	2151118-1	1999554-1
3.5	1612335-1	Tab	26-22	2151118-1	1999554-1
3.5	1565079-1	Receptacle	22-18	2151077-1	1596277-1
3.5	1565080-1	Tab	22-18	2151077-1	1596277-1
5.8	2365991-1	Receptacle	16-14	2370862	-
5.8	2365990-1	Tab	16-14	2371121	-
6.0 & 6.5 & 7.92	1376347-1	Receptacle	20-16	2151079-1	1729064-1
6.0 & 6.5 & 7.92	1376348-1 1376348-2**	Receptacle	24-20	2151130-1	1762773-1
6.2	1746973-1	Tab	16-14	1729410-2	1729675-1
6.2	1746974-1	Tab	14-12	1729409-2	1729674-1
6.2 & 9.0 & 12.4	1746971-1	Receptacle	16-14	1729410-2	1729675-1
6.2 & 9.0 & 12.4	1746972-1	Receptacle	14-12	1729409-2	1729674-1

** with lubricant

OPTIONAL DOUBLE LOCK PLATES (TPA DEVICES)

Centerline (mm)	Positions	Color	Optional TPA	Wire Size (AWG)
3.3	4P	Blue	2-1971904-2	24-20
		Yellow	4-1971904-2	28-26
3.3	6P	Blue	2-1971904-3	24-20
		Yellow	4-1971904-3	28-26
3.3	8P	Blue	2-1971904-4	24-20
		Yellow	4-1971904-4	28-26
3.3	10P	Blue	2-1971904-5	24-20
		Yellow	4-1971904-5	28-26
3.3	12P	Blue	2-1971904-6	24-20
		Yellow	4-1971904-6	28-26
3.3	14P	Blue	2-1971904-7	24-20
		Yellow	4-1971904-7	28-26

Centerline (mm)	Positions	Color	Optional TPA	Wire Size (AWG)
3.5	2P	Natural	1565089-1	26-18
3.5	3P	Natural	1565090-1	26-18
3.5	8P	Natural	2357091-1	26-18
3.5	10P	Natural	2357094-1	26-18
3.5	12P	Natural	2357097-1	26-18
5.8	3P	Black	2365951-1	16-14
6.2	3P	Black	1-2232564-1	16-12
9.0	3P	Black	2232563-1	16-12
12.4	2P	Black	1-2232564-1	16-12

To see the full selection of GRACE INERTIA connector products, please visit [TE.com](https://www.te.com) or contact your sales representative for more information.

DESIGN-IN QUESTIONS

1. Would you like to help ensure complete mating of the connectors in your application?

The GRACE INERTIA connector series mates to simultaneously complete the circuit and then locks for in-connector mating reliability.

Furthermore, visual inspection for half mating is difficult and is a cause of complicated inspection processes. The GRACE INERTIA connector series uses a lock-on mechanism that does not pass an electric current if it is half mated. This makes it possible to detect half mated connections during an electrical conductivity test, which enables you to help prevent defective products caused by half mating.

2. For what type of application are you seeking a connector?

These connectors can be used in a wide range of products from home appliances to vending machines and are a solution that can help eliminate human error during assembly.

3. What are the current and voltage requirements for your application?

GRACE INERTIA connectors have varying current and voltage requirements for the various centerline options. Refer to the chart on page 1 of the quick reference guide to view the current and voltage capabilities of our various centerline options.

4. What are the wire size and type requirements?

GRACE INERTIA connectors accept wire sizes from #26 to #12 AWG, varying on number of positions and centerline pitch. A table on page 1 of the quick reference guide provides an overview. Details about wire size can be found in the 108 product specifications and 114 application specifications accessible on [te.com](https://www.te.com). Contact your sales representative for more information.

5. How many positions do you need, and do you need a wire-to-wire or wire-to-board connector?

The GRACE INERTIA connector series offers both wire-to-wire and wire-to-board configurations depending on the centerline. These configurations are available in various positions depending on the centerline selected. Refer to page 1 of the quick reference guide to see the positions available for each centerline.

6. What are the operating temperature requirements?

The GRACE INERTIA connector series has an operating temperature range from -30°C to +105°C.

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7. Is contact back-out a concern?

To ensure the contacts are seated, the GRACE INERTIA connector series offers optional double lock plates in the 3.3mm and 3.5mm centerline options. Additional double lock plate options are coming soon. Talk to your sales representative for more information.

8. Do you need to differentiate this connector from other connectors in the application?

The GRACE INERTIA connector series offer multiple options of colored housings (natural, red, blue, and yellow) for easier connector identification during manufacturing and assembly. Multiple keying options are also offered to prevent mismatching between the various plug and header/cap options.

9. Will you be applying a conformal coating to your PC board?

GRACE INERTIA headers are designed to be compatible with various board coatings.

FOR MORE INFORMATION

ASK OUR EXPERT ►

te.com/grace-inertia-connector-series

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