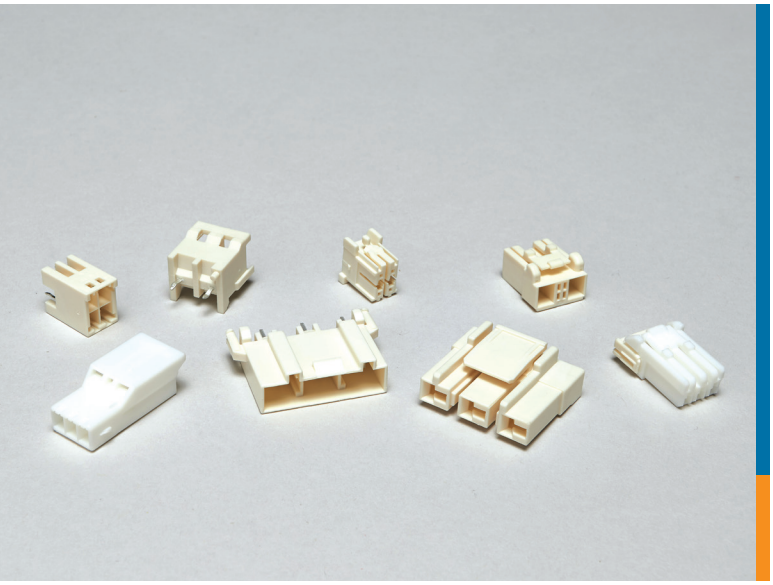


GRACE INERTIA CONNECTOR SERIES

Quick Reference Guide

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.

KEY FEATURES

- Design assures proper insertion, preventing header pin deformation
- Inertia locking mechanism helps prevent unintended disconnection
- Lanceless contacts prevent snagging or entanglement
- Four keying methods and colors
- Dual beam contact design provides good contact and durability
- Ergonomic design allows easy assembly
- Optional double lock plates (TPA devices) available for some models

APPLICATIONS

- Washing machines
- Household appliances
- Air conditioners
- Refrigerators
- Vending machines
- Control cabinets
- Industrial controls
- Industrial machinery
- HVAC systems
- Urethane coating on PCB boards
- Transportation solutions

AVAILABLE CENTERLINES

- 3.3 mm
- 3.5 mm
- 6.0 mm
- 6.2 mm
- 6.5 mm
- 7.92 mm
- 9.0 mm
- 12.4 mm

GRACE INERTIA CONNECTOR SERIES OVERVIEW

Centerline (mm)	Current Rating (A)	Voltage Rating	Wire Size (AWG)	Positions	Configurations	Operating Temp. Range	Flammability	Agency Certifications
3.3	4	250 VAC	20-20	4,6,8,10,12	Wire to Board	-30°C to +105°C	UL 94 V0	UL, CSA
3.5	7	300 VAC	26-18	2,3,4,6	Wire to Wire		UL 94 V0	
6.0	10	600 VAC	24-16	2,3	Wire to Board		UL 94 V0	
6.2	20	600 VAC	16-12	1,2,3	Wire to Wire		UL 94 V0 CTI600V	
6.5	10	300 VAC	24-16	3	Wire to Board		UL 94 V0	
7.92	10	300 VAC	24-16	2	Wire to Board		UL 94 V0	
9.0	20	600 VAC	16-12	3	Wire to Board		UL 94 V0	
12.4	20	600 VAC	16-12	2	Wire to Board		UL 94 V0	

GRACE INERTIA PRODUCT OFFERING

Centerline	Positions	Cap Housing	Plug Housing	Header Assembly	Optional TPA
3.3 mm	4P	-	1-1971905-2	1-1971906-2	1971904-2
3.3 mm	6P	-	1-1971905-3	1-1971906-3	1971904-3
3.3 mm	8P	-	1-1971905-4	1-1971906-4	1971904-4
3.3 mm	10P	-	1-1971905-5	1-1971906-5	1971904-5
3.3 mm	12P	-	1-1971905-6	1-1971906-6	1971904-2
3.5 mm	2P	2-1565085-3	2-1565081-3	-	1565089-1, 5-1565089-1
3.5 mm	2P	3-1565085-4	3-1565081-4	-	1565089-1, 5-1565089-1
3.5 mm	2P	1-1565085-2	1-1565081-2	-	1565089-1, 5-1565089-1
3.5 mm	2P	1565085-1	1565081-1	-	1565089-1, 5-1565089-1
3.5 mm	3P	2-1565086-3	2-1565082-3	-	1565090-1, 5-1565090-1
3.5 mm	3P	3-1565086-4	3-1565082-4	-	1565090-1, 5-1565090-1
3.5 mm	3P	1565086-1	1565082-1	-	1565090-1, 5-1565090-1
3.5 mm	4P	1565087-1	1565083-1	-	1565089-1, 5-1565089-1
3.5 mm	6P	1565088-1	1565084-1	-	1565090-1, 5-1565090-1
6.0 mm	2P	-	2-2232875-1	2-2232876-1	-
6.0 mm	3P	-	3-2232875-1	3-2232876-1	-
6.2 mm	1P	1903684-1	1903683-1	-	-
6.2 mm	2P	1746977-1	1746975-1	-	-
6.2 mm	3P	1746978-1	1871867-1	-	-
6.5 mm	3P	-	1747047-1	1747049-1	-
7.92 mm	2P	-	3-1747050-1	3-1747052-1	-
7.92 mm	2P	-	1747050-1	1747052-1	-
7.92 mm	2P	-	3-1747050-4	3-1747052-4	-
9.0 mm	3P	-	1-1903414-1, -2*	1-1903415-1	2232563-1
9.0 mm	3P	-	1903414-1, -2*	1903415-1	2232563-1
9.0 mm	3P	-	2-1903414-1, -2*	2-1903415-1	2232563-1
12.4 mm	2P	-	1747995-1	1747996-1	1-2232564-1
12.4 mm	2P	-	1747995-2	1747996-2	1-2232564-1
12.4 mm	2P	-	1747995-3	1747996-3	1-2232564-1

*Models with "-2" suffix on part number accommodate optional TPA.

Please note that this is only a small selection of GRACE INERTIA series products. There are a number of additional configurations available including various colors, keying options, and double lock plates where applicable. To see a complete selection of GRACE INERTIA product visit TE.com or contact your sales representative for more information.

GRACE INERTIA RECEPTACLE & TAB OFFERING

Centerlines	Part Number	Type	Wire Size AWG	Applicator	Hand Tool
3.3mm	1612334-1	Receptacle	26-22	1596591-2	-
3.3mm	1612335-1	Tab	26-22	1596591-1	-
3.5mm	1565079-1	Receptacle	22-18	1463445-2	1596277-1
3.5mm	1565080-1	Tab	22-18	1463445-2	1596277-1
6.0mm	1376347-1	Receptacle	20-16	1366703-2	1729064-1
6.0mm	1376348-1	Receptacle	24-20	1463049-2	-
6.2mm	1746973-1	Tab	16-14	1729410-2	1729675-1
6.2mm	1746974-1	Tab	14-12	1729409-2	1729674-1
6.2mm, 9.0mm, 12.4mm	1746971-1	Receptacle	16-14	1729410-2	1729675-1
6.2mm, 9.0mm, 12.4mm	1746972-1	Receptacle	14-12	1729409-2	1729674-1

GRACE INERTIA TECHNICAL SPECIFICATIONS

Centerlines	108 Specification	114 Specification
3.3mm	108-78231	114-5372
3.5mm	108-5810	114-5306
6.0mm	108-106193	114-5292
6.2mm	108-5979	114-5356
6.5mm & 7.92mm	108-5990	114-5292
9.0mm	108-78357	114-5356
12.4mm	108-78232	114-5356

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. 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.

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 mismating 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.

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1-1773883-5 03/18 Revised