

Introduction



The AMPSEAL 16 Connector System is targeted for off-road and heavy duty industrial applications. This wire-to-wire and wire-to-device connector line was designed to meet the rigorous demands of an industry that requires the highest standards in performance.

This connector family will feature the HDSF Size 16 Pin and Socket contacts as a terminal system.

These contacts are stamped and formed versions of the screw machined MIL-C-39029 contacts. The 2-, 3-, 4-, 6-, 8- and 12-position housings will offer a one-piece assembly for both plug and cap.

**Technical Features**

- Keyed / polarized, prevents mismatching
- Lanceless contacts, no damaged tangs or tangled contacts
- Integral CPA, protects against accidental unlocking
- Sleeved assembly for contact beam protection provides 50 durability cycles
- Attachment feature on pin housing provides connector clip mounting
- Integral TPA provides terminal position assurance with no additional assembly
- Sealing of interface and wires provides for environmental integrity

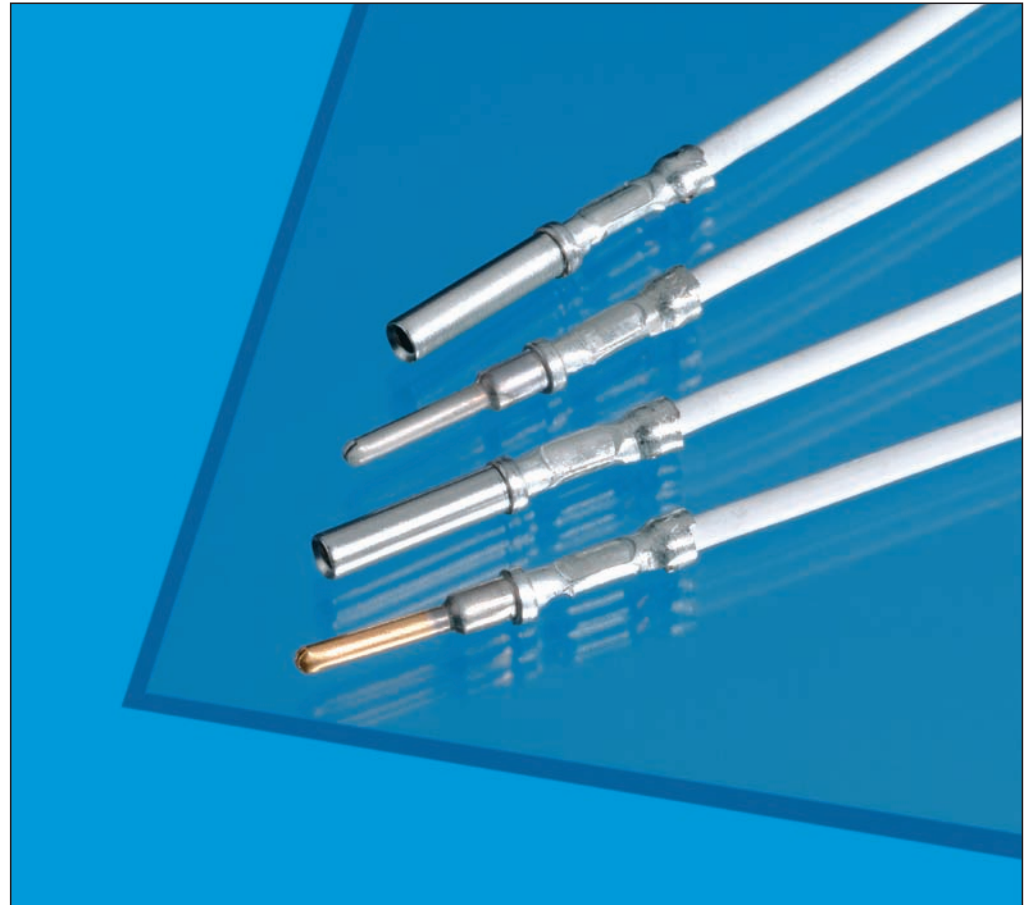
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Engineering Notes

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Introduction



The HDSF Size 16 Pin and Socket contacts system is a stamped and formed version of the screw machine MIL-C-39029 contacts.

The Tyco Electronics Size 16 contact system offers a thicker and higher performance alloy base metal, providing the following superior benefits over most of the competitive stamped and formed size 16 contact systems.

1. Increased Terminal/Beam Strength.
2. Greater resistance to stress relaxation.
3. Increased current carrying ability due to lower T-Rise (20%).

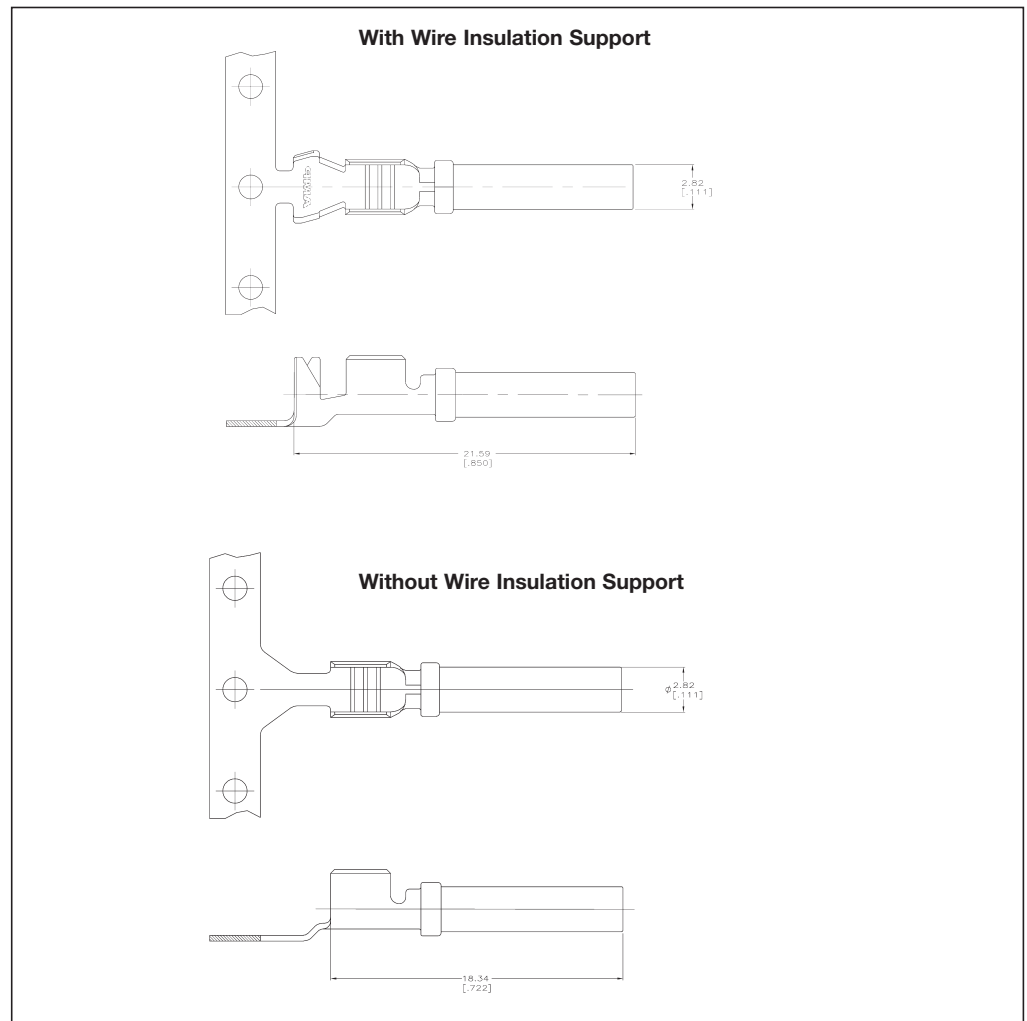
**Technical Features**

- 1.58 mm Pin and Socket System per MIL-C-39029
- Lance less design
- Dual Beam Socket Contact
- Wire Size 20–14 AWG (0.5–2.0 mm)
- Wire Insulation 1.7–2.7 mm
- Terminal Plating Gold or Nickel
- Current Rating up to 13 amps
- Vibration performance up to 35 G's

Receptacle Contacts

**Technical Features**

- Contact Material:**  
Copper Alloy
- Contact Finish:**  
Gold or Nickel
- Wire Size Range:**  
0.5–2.0 mm<sup>2</sup> (20–14 AWG)
- Insulation Diameter:**  
1.30–3.67 mm
- Current Carrying Capacity:**  
13 amps
- Temperature Range**  
–40 °C to +120 °C
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Receptacle Contacts with Wire Insulation Support**

Wire Size Range		Insulation Diameter (mm)	Material and Finish	Part Numbers				Applicator	Hand Tool
(mm <sup>2</sup> )	(AWG)			Strip Form	Package Quantity	Loose-Piece	Package Quantity		
0.5–0.8	20–18	1.30–2.54	Copper Alloy, Gold	1924464-1	–	–	–	–	–
			Copper Alloy, Nickel	1924464-2	–	–	–		
0.8–2.0	18–14	2.18–3.67	Copper Alloy, Gold	776492-1	4,000	776299-1	1,000	–	–
			Copper Alloy, Nickel	776492-2	4,000	776299-2	1,000		

**Note:** All Part Numbers are RoHS and ELV compliant.

**Receptacle Contacts without Wire Insulation Support**

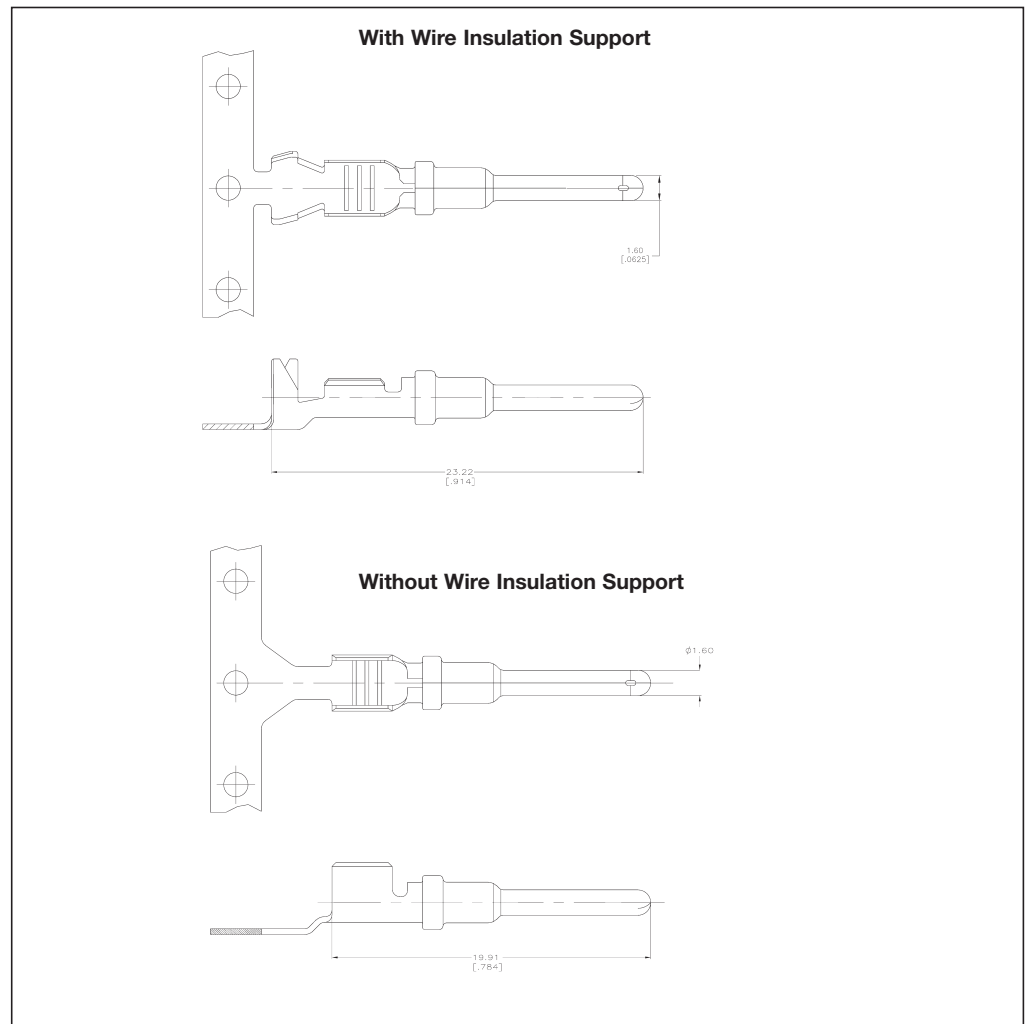
Wire Size Range		Insulation Diameter (mm)	Material and Finish	Part Numbers				Applicator	Hand Tool
(mm <sup>2</sup> )	(AWG)			Strip Form	Package Quantity	Loose-Piece	Package Quantity		
0.8–2.0	18–14	2.18–3.67	Copper Alloy, Gold	776491-1	4,000	776297-1	1,000	–	–
			Copper Alloy, Nickel	776491-2	4,000	776297-2	1,000		

**Note:** All Part Numbers are RoHS and ELV compliant.

Pin Contacts

**Technical Features**

- Contact Material:**  
Copper Alloy
- Contact Finish:**  
Gold or Nickel
- Wire Size Range:**  
0.5–2.0 mm<sup>2</sup> (20–14 AWG)
- Insulation Diameter:**  
1.30–3.67 mm
- Current Carrying Capacity:**  
13 amps
- Temperature Range**  
–40 °C to +120 °C
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Pin Contacts with Wire Insulation Support**

Wire Size Range		Insulation Diameter (mm)	Material and Finish	Part Numbers				Applicator	Hand Tool
(mm <sup>2</sup> )	(AWG)			Strip Form	Package Quantity	Loose-Piece	Package Quantity		
0.5–0.8	20–18	1.30–2.54	Copper Alloy, Gold	1924463-1	–	–	–	–	–
			Copper Alloy, Nickel	1924463-3	–	–	–		
0.8–2.0	18–14	2.18–3.67	Copper Alloy, Gold	638078-1	4,000	776300-1	1,000	–	–
			Copper Alloy, Nickel	638078-3	4,000	776300-2	1,000		

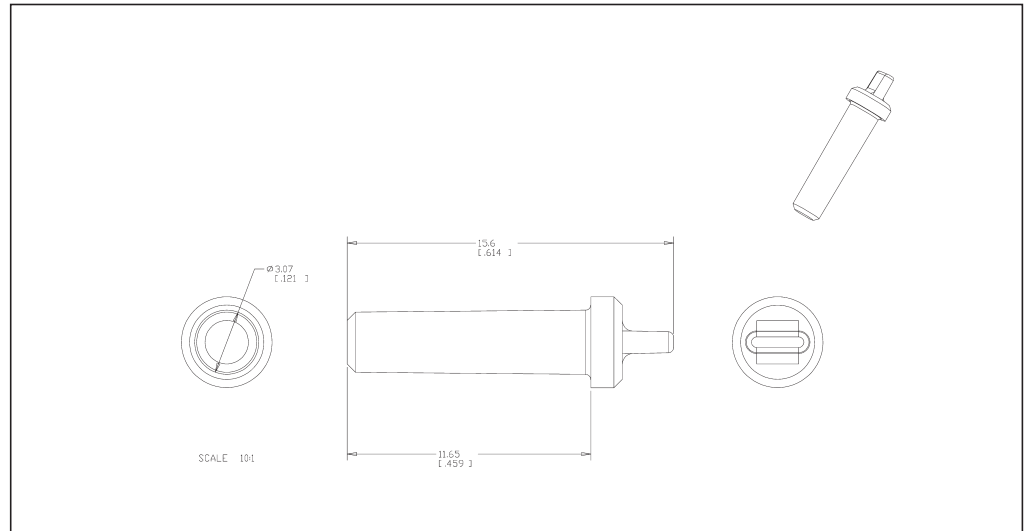
**Note:** All Part Numbers are RoHS and ELV compliant.

**Pin Contacts without Wire Insulation Support**

Wire Size Range		Insulation Diameter (mm)	Material and Finish	Part Numbers				Applicator	Hand Tool
(mm <sup>2</sup> )	(AWG)			Strip Form	Package Quantity	Loose-Piece	Package Quantity		
0.8–2.0	18–14	2.18–3.67	Copper Alloy, Gold	638112-1	4,000	776298-1	1,000	–	–
			Copper Alloy, Nickel	638112-3	4,000	776298-2	1,000		

**Note:** All Part Numbers are RoHS and ELV compliant.

**Cavity Plugs for Unsealed Cavity**



Contact Cavity Size		Color	Part Number	Package Quantity
(mm)	(AWG)			
3.07	16	Yellow	776363-1	10,000
2.55	20	White	776364-1	10,000

Introduction



The AMPSEAL 16 Receptacle and Pin housings come fully assembled, offering a one-piece approach for applied cost savings. Receptacle housing assemblies consist of the plug housing with both interface and wire seals, wire seal cover, TPA, & CPA.

Pin housing assemblies are comprised of cap housing with wire seal, wire seal cover, & TPA. The single latch design with anti-overstress feature is only one of many additional features. Both color coding and physical keying prevents mismatching when multiple housings of the same position size are used in the application.

**Technical Features**

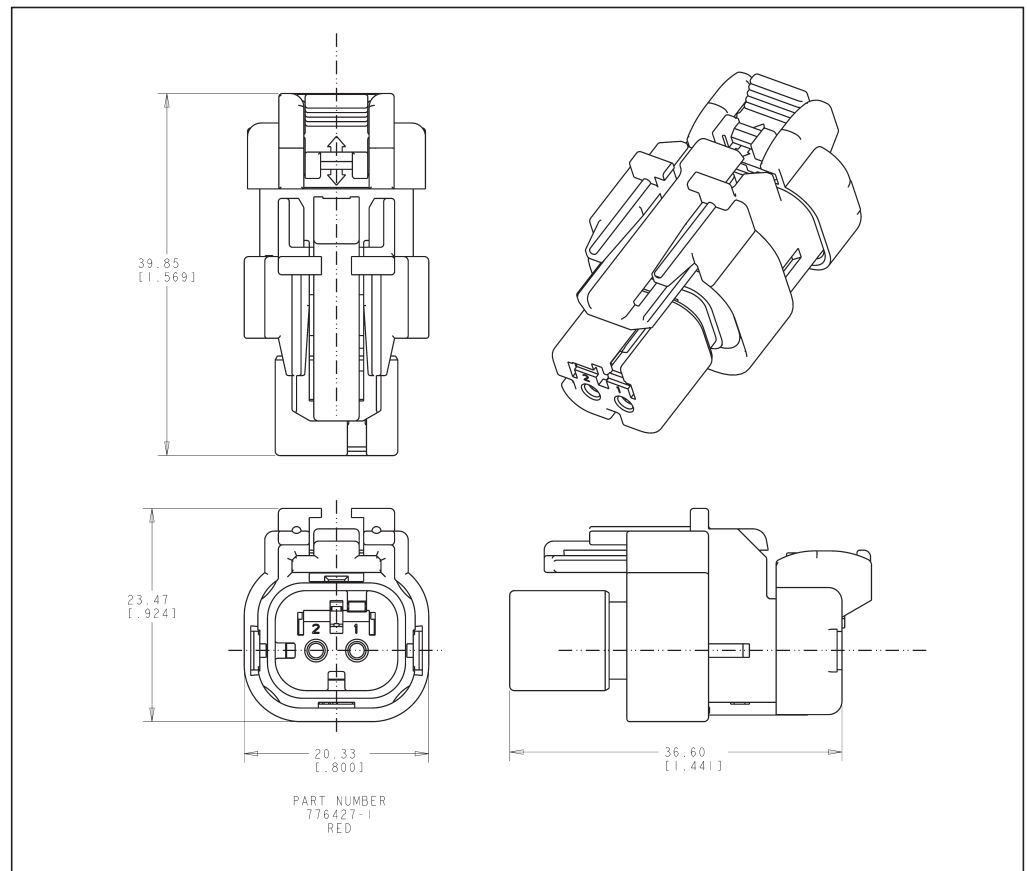
- Integral TPA provides terminal position assurance with no additional assembly
- Keyed / polarized, prevents mismatching
- Integral CPA, protects against accidental unlocking
- Attachment feature on pin housing provides connector clip mounting



**1-Row Sealed Receptacle Housings**

**Technical Features**

- No. of Positions:**  
2 (1×2) Positions Assembly
- Housing Material:**  
Glass Reinforced PBT
- Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Sealed Receptacle Housings 1-Row**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
2	Red	776427-1	776428-1
			1717672-1
	Grey	776427-2	776428-2
			1717672-2
	Yellow	776427-3	776428-3
			1717672-3
	Green	776427-4	776428-4
			1717672-4

**Sealed Receptacle Housings 1-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
2	Red	776522-1	776534-1
	Grey	776522-2	776534-2
	Yellow	776522-3	776534-3
	Green	776522-4	776534-4



1-Row Sealed Receptacle Housings (continued)

**Technical Features**

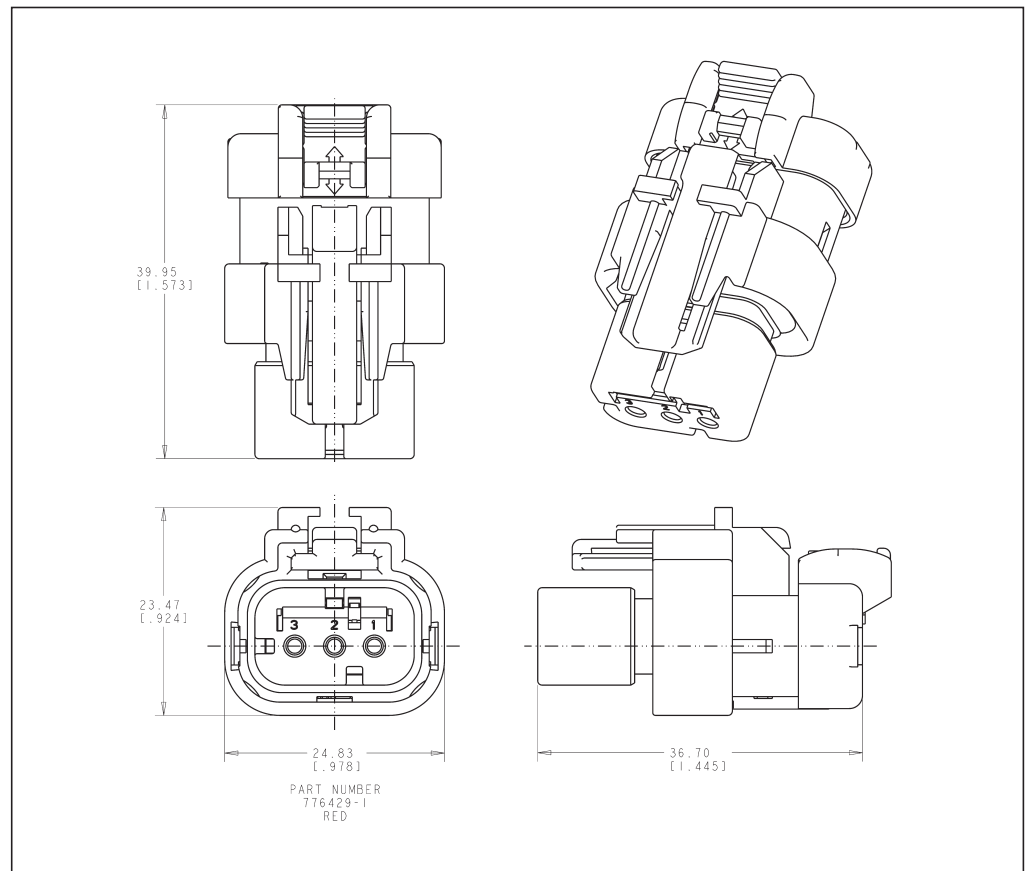
**No. of Positions:**  
3 (1×3) Positions Assembly

**Housing Material:**  
Glass Reinforced PBT

**Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)

**Product Specification:**  
108-2184

**Application Specification:**  
114-13065



**Sealed Receptacle Housings 1-Row**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
3	Red	776429-1	776430-1
			1717673-1
	Grey	776429-2	776430-2
			1717673-2
	Yellow	776429-3	776430-3
			1717673-3
	Green	776429-4	776430-4
			1717673-4

**Sealed Receptacle Housings 1-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
3	Red	776523-1	776535-1
	Grey	776523-2	776535-2
	Yellow	776523-3	776535-3
	Green	776523-4	776535-4

**2-Row Sealed Receptacle Housings**

**Technical Features**

**No. of Positions:**

4 (2×2) Positions Assembly

**Housing Material:**

Glass Reinforced PBT

**Wire Size Range:**

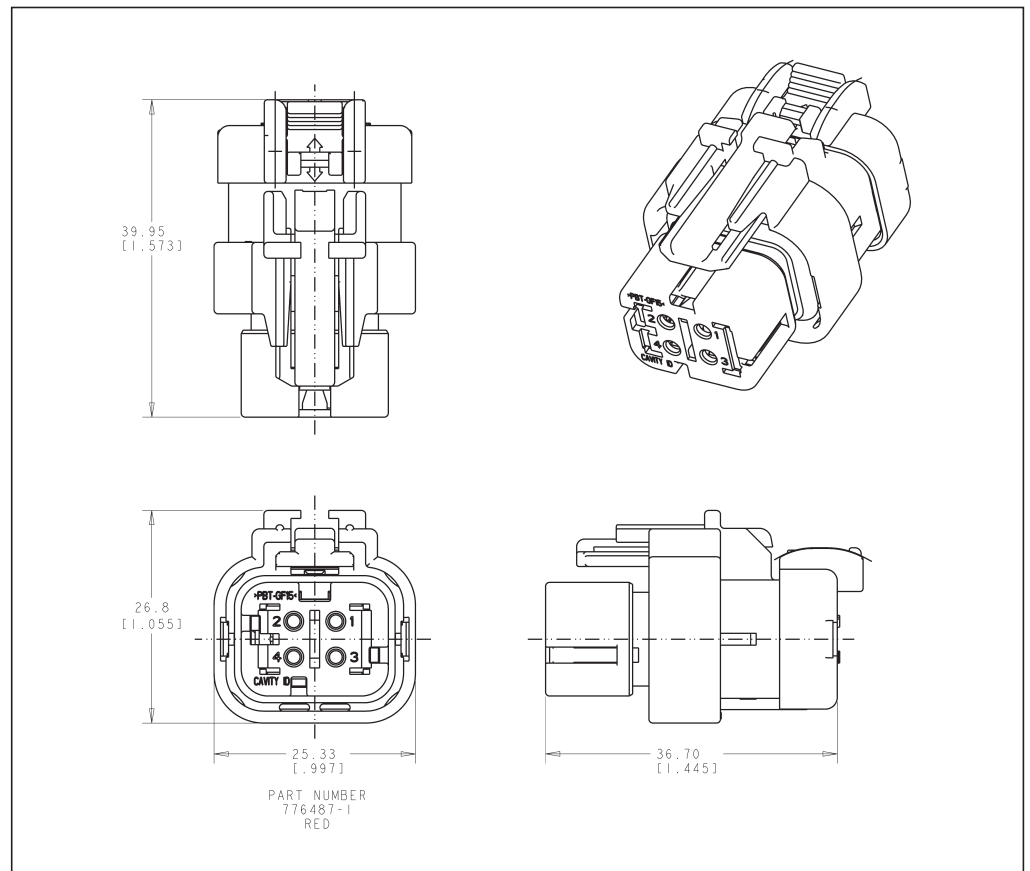
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)

**Product Specification:**

108-2184

**Application Specification:**

114-13065



**Sealed Receptacle Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
4	Red	776487-1	776488-1
			1717674-1
	Grey	776487-2	776488-2
			1717674-2
	Yellow	776487-3	776488-3
			1717674-3
	Green	776487-4	776488-4
			1717674-4

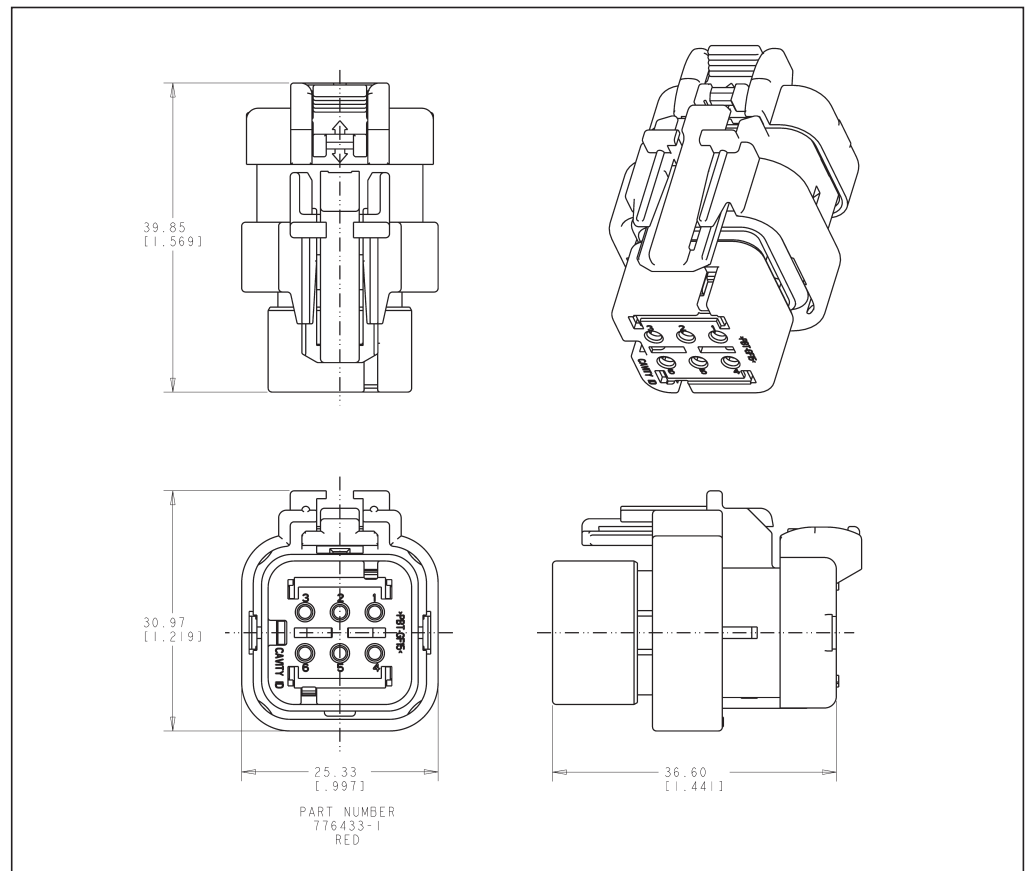
**Sealed Receptacle Housings 2-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
4	Red	776524-1	776536-1
	Grey	776524-2	776536-2
	Yellow	776524-3	776536-3
	Green	776524-4	776536-4

2-Row Sealed Receptacle Housings (continued)

**Technical Features**

- No. of Positions:**  
6 (2×3) Positions Assembly
- Housing Material:**  
Glass Reinforced PBT
- Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Sealed Receptacle Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
6	Red	776433-1	776434-1
			1717675-1
	Grey	776433-2	776434-2
			1717675-2
	Yellow	776433-3	776434-3
			17176753

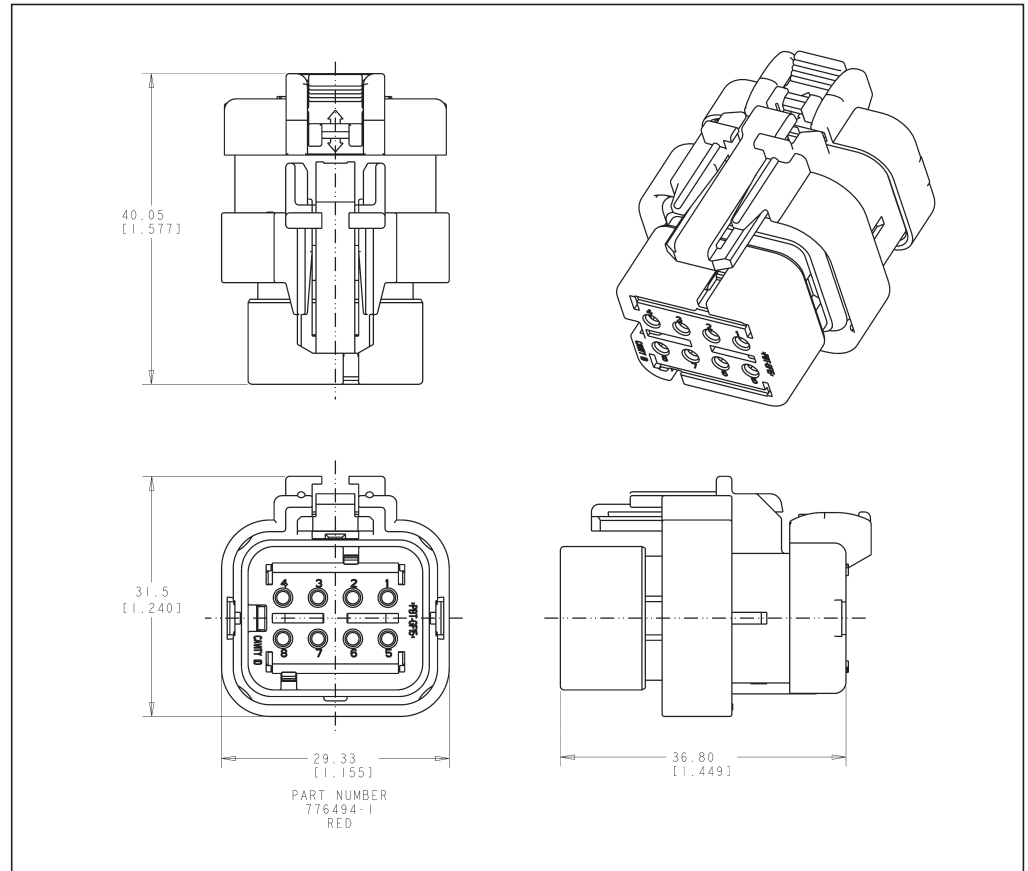
**Sealed Receptacle Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
6	Red	776531-1	776537-1
			1717975-1
	Grey	776531-2	776537-2
			1717975-2
	Yellow	776531-3	776537-3
			1717975-3

2-Row Sealed Receptacle Housings (continued)

**Technical Features**

- No. of Positions:**  
8 (2×4) Positions Assembly
- Housing Material:**  
Glass Reinforced PBT
- Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Sealed Receptacle Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
8	Red	776494-1	776495-1
			1717676-1
	Grey	776494-2	776495-2
			1717676-2
	Yellow	776494-3	776495-3
			1717676-3
	Green	776494-4	776495-4
			1717676-4

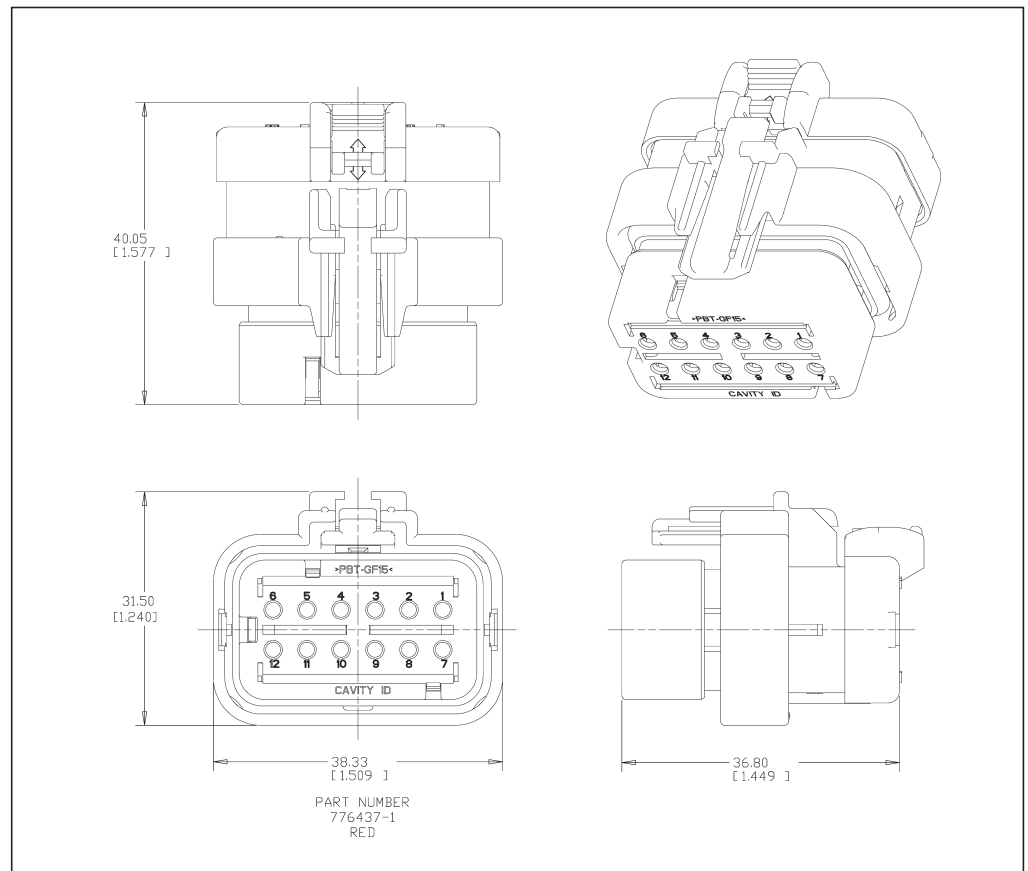
**Sealed Receptacle Housings 2-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
8	Red	776532-1	776538-1
	Grey	776532-2	776538-2
	Yellow	776532-3	776538-3
	Green	776532-4	776538-4

2-Row Sealed Receptacle Housings (continued)

**Technical Features**

- No. of Positions:**  
12 (2×6) Positions Assembly
- Housing Material:**  
Glass Reinforced PBT
- Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Sealed Receptacle Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
12	Red	776437-1	776438-1 1717677-1
	Grey	776437-2	776438-2 1717677-2
	Yellow	776437-3	776438-3 1717677-3
	Green	776437-4	776438-4 1717677-4

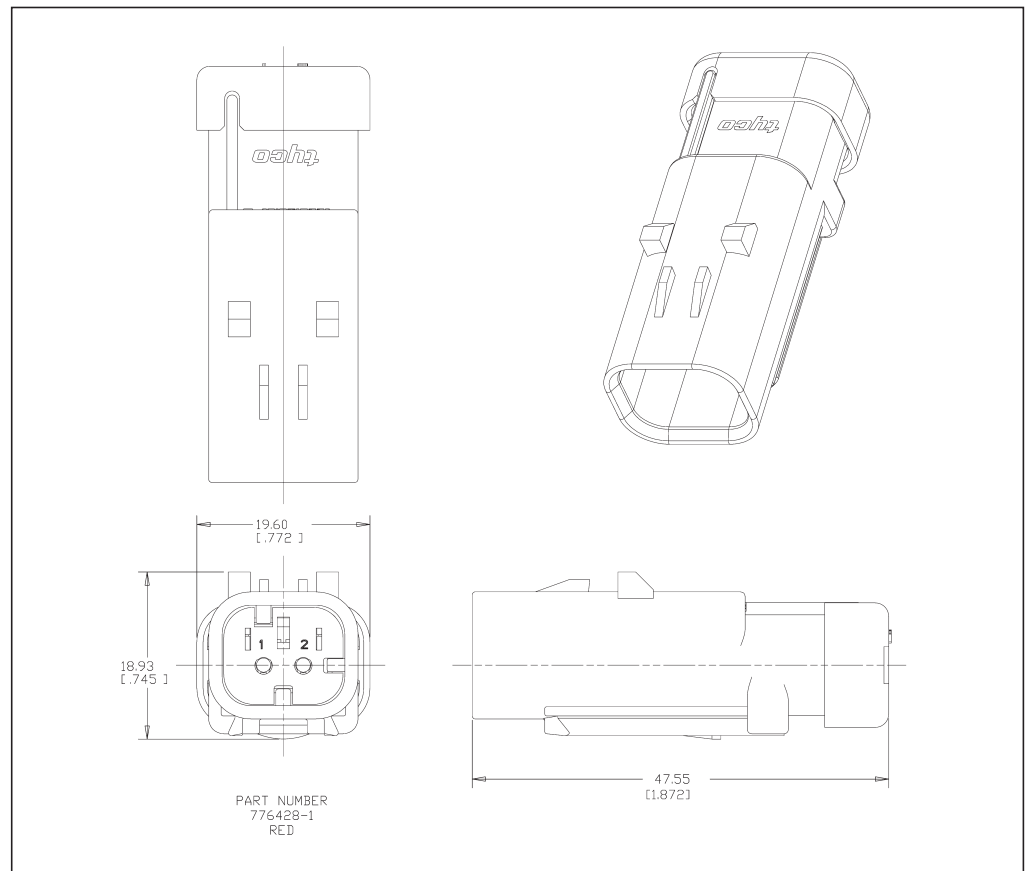
**Sealed Receptacle Housings 2-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Receptacle Housing	Mating Pin Housing
12	Red	776533-1	776539-1 1717934-1
	Grey	776533-2	776539-2 1717934-2
	Yellow	776533-3	776539-3 1717934-3
	Green	776533-4	776539-4 1717934-4

1-Row Sealed Pin Housings

**Technical Features**

- No. of Positions:**  
2 (1×2) Positions Assembly
- Housing Material:**  
Glass Reinforced PBT
- Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Sealed Pin Housings 1-Row**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
2	Red	776428-1	776427-1
	Grey	776428-2	776427-2
	Yellow	776428-3	776427-3
	Green	776428-4	776427-4

**Sealed Pin Housings 1-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
2	Red	776534-1	776522-1
	Grey	776534-2	776522-2
	Yellow	776534-3	776522-3
	Green	776534-4	776522-4

1-Row Sealed Pin Housings (continued)

**Technical Features**

**No. of Positions:**

3 (1×3) Positions Assembly

**Housing Material:**

Glass Reinforced PBT

**Wire Size Range:**

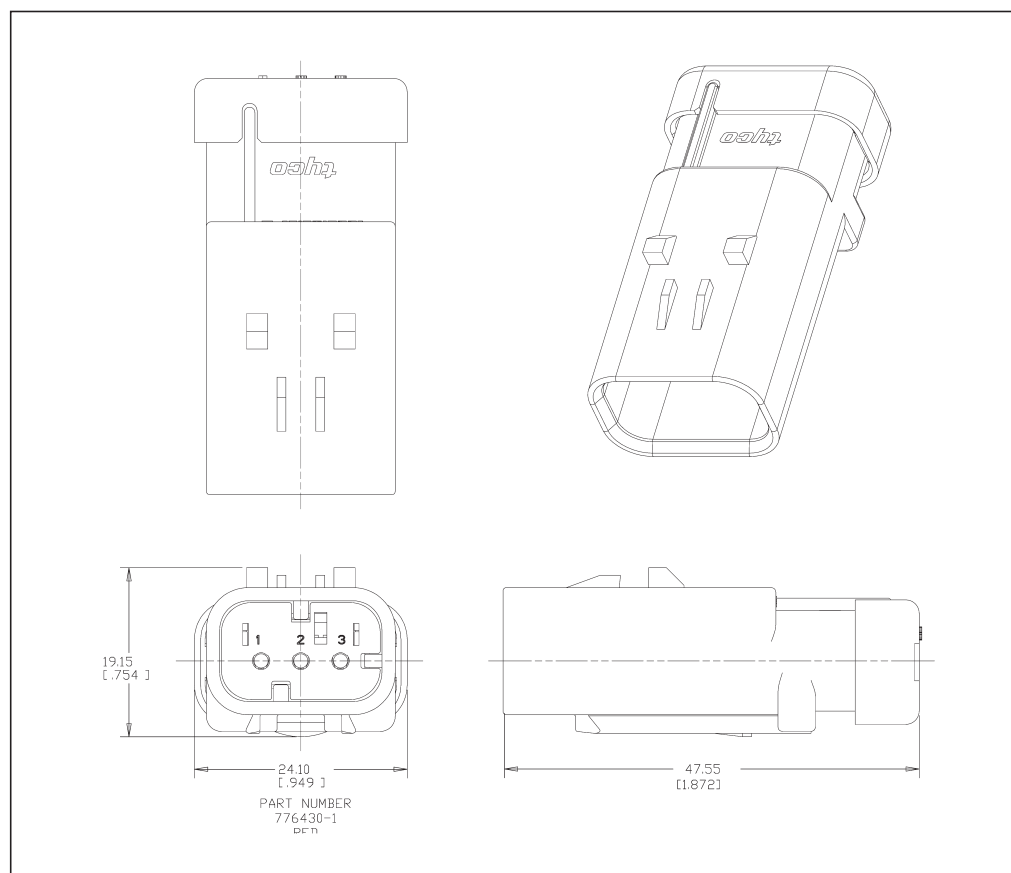
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)

**Product Specification:**

108-2184

**Application Specification:**

114-13065



**Sealed Pin Housings 1-Row**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
3	Red	776430-1	776429-1
	Grey	776430-2	776429-2
	Yellow	776430-3	776429-3
	Green	776430-4	776429-4

**Sealed Pin Housings 1-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
3	Red	776535-1	776523-1
	Grey	776535-2	776523-2
	Yellow	776535-3	776523-3
	Green	776535-4	776523-4



1-Row Sealed Pin Housings – Reversed Type

**Technical Features**

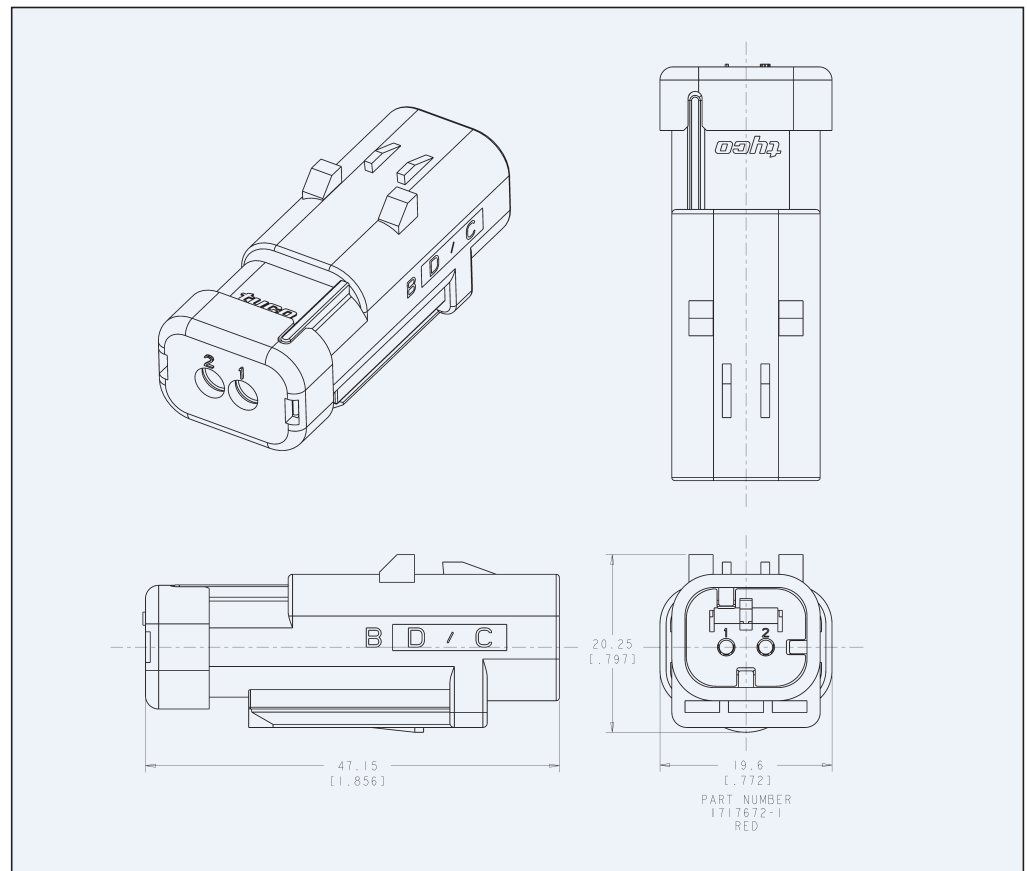
**No. of Positions:**  
2 (1×2) Positions Assembly

**Housing Material:**  
Glass Reinforced PBT

**Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>

**Product Specification:**  
108-2184

**Application Specification:**  
114-13065



**Sealed Pin Housings 1-Row – Reversed Type**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
2	Red	1717672-1	776427-1
	Grey	1717672-2	776427-2
	Yellow	1717672-3	776427-3
	Green	1717672-4	776427-4

1-Row Sealed Pin Housings – Reversed Type (continued)

**Technical Features**

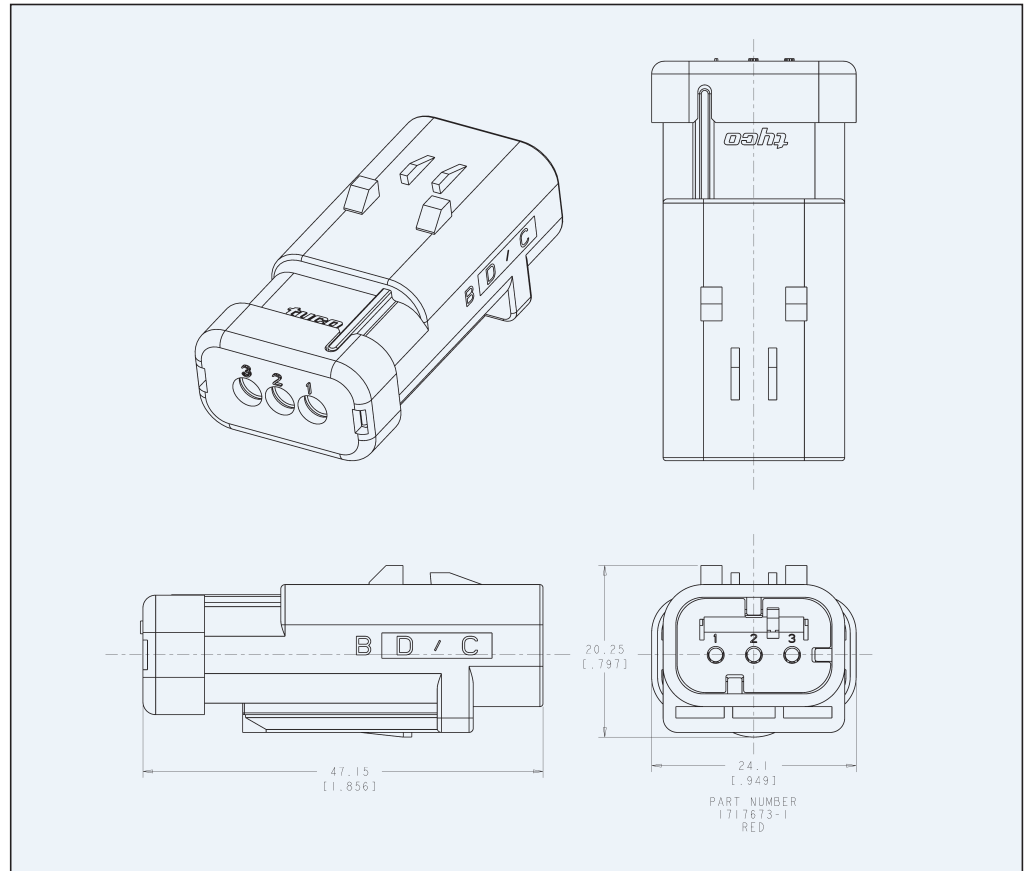
**No. of Positions:**  
3 (1×3) Positions Assembly

**Housing Material:**  
Glass Reinforced PBT

**Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>

**Product Specification:**  
108-2184

**Application Specification:**  
114-13065



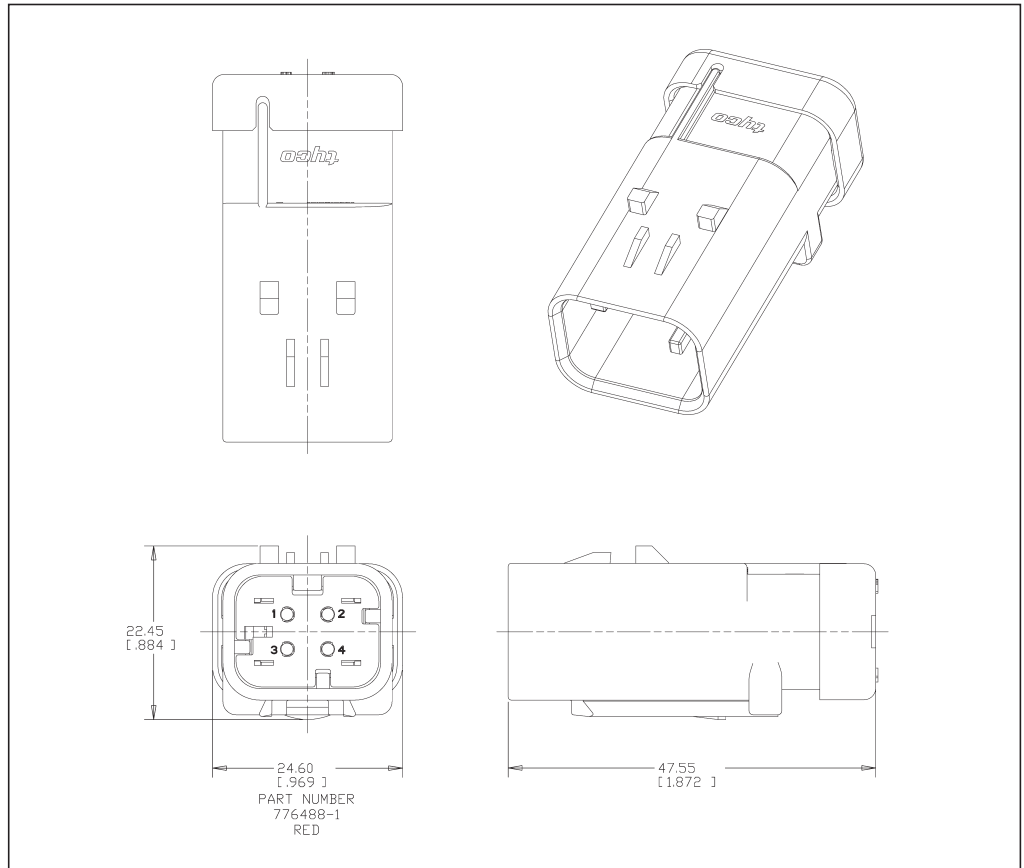
**Sealed Pin Housings 1-Row – Reversed Type**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
3	Red	1717673-1	776429-1
	Grey	1717673-2	776429-2
	Yellow	1717673-3	776429-3
	Green	1717673-4	776429-4

**2-Row Sealed Pin Housings**

**Technical Features**

- No. of Positions:**  
4 (2×2) Positions Assembly
- Housing Material:**  
Glass Reinforced PBT
- Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Sealed Pin Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
4	Red	776488-1	776487-1
	Grey	776488-2	776487-2
	Yellow	776488-3	776487-3
	Green	776488-4	776487-4

**Sealed Pin Housings 2-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
4	Red	776536-1	776524-1
	Grey	776536-2	776524-2
	Yellow	776536-3	776524-3
	Green	776536-4	776524-4

2-Row Sealed Pin Housings (continued)

**Technical Features**

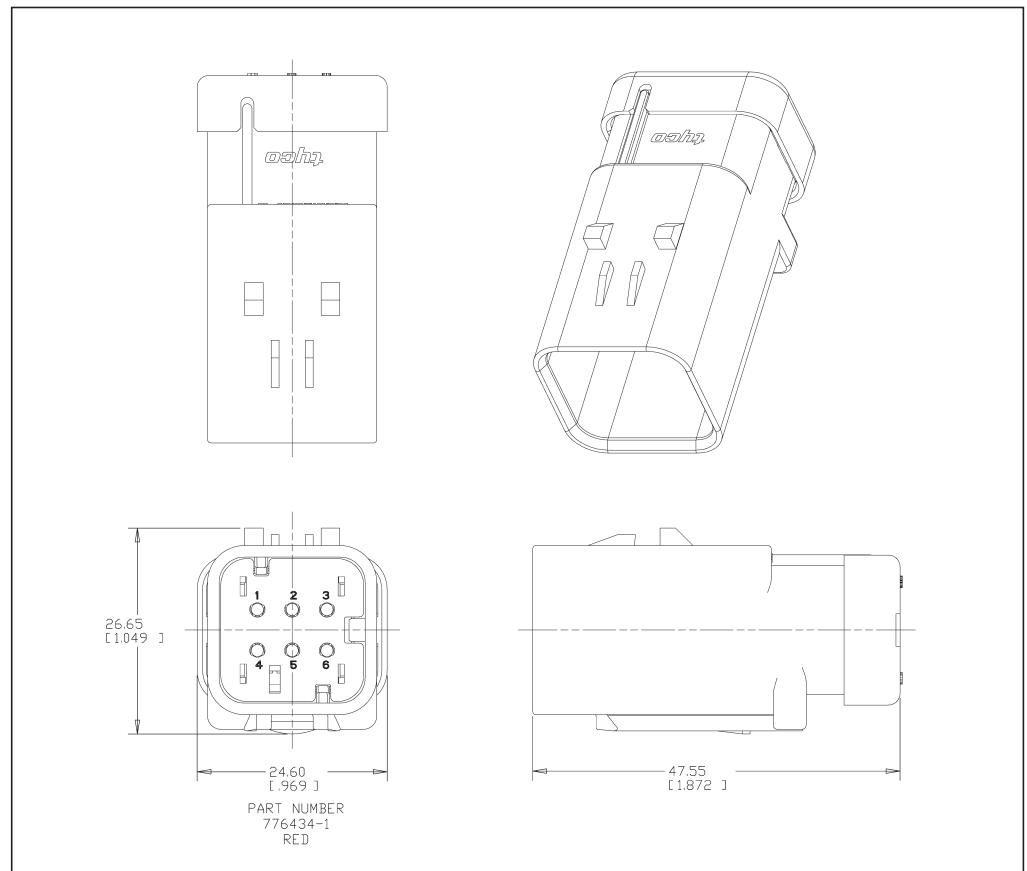
**No. of Positions:**  
6 (2×3) Positions Assembly

**Housing Material:**  
Glass Reinforced PBT

**Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)

**Product Specification:**  
108-2184

**Application Specification:**  
114-13065



**Sealed Pin Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
6	Red	776434-1	776433-1
	Grey	776434-2	776433-2
	Yellow	776434-3	776433-3

**Sealed Pin Housings 2-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
6	Red	776537-1	776531-1
	Grey	776537-2	776531-2
	Yellow	776537-3	776531-3

2-Row Sealed Pin Housings (continued)

**Technical Features**

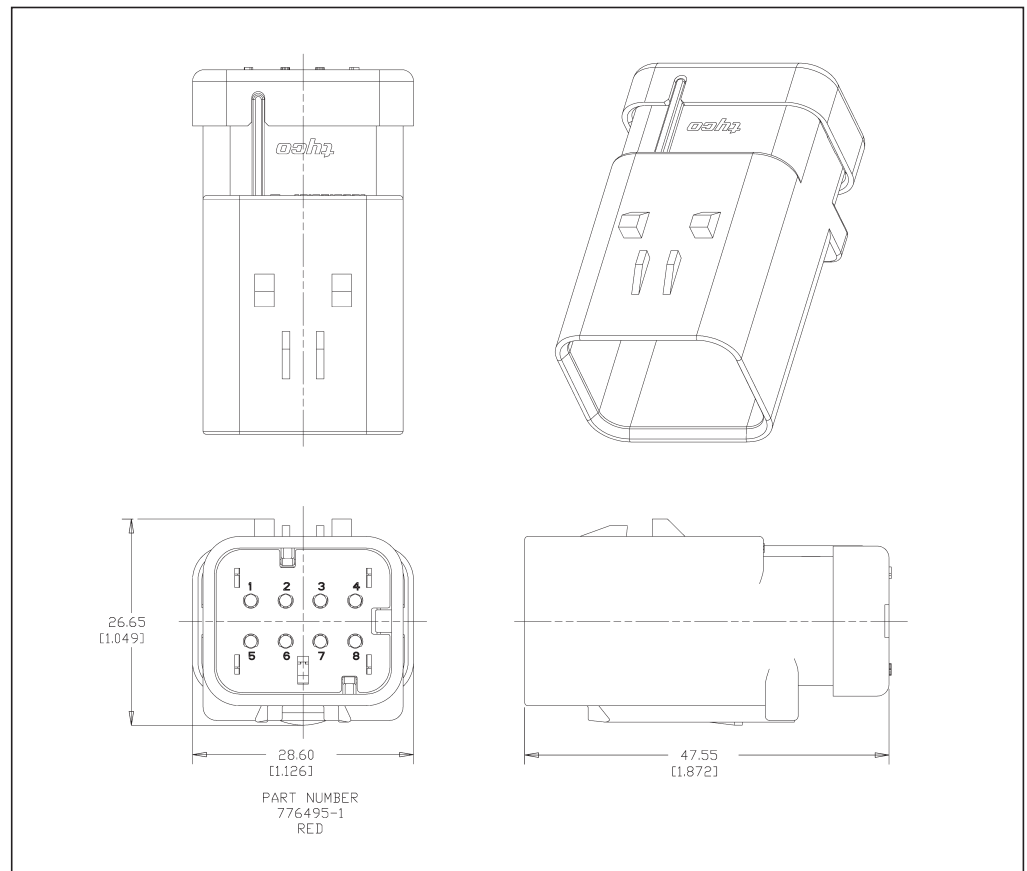
**No. of Positions:**  
8 (2×4) Positions Assembly

**Housing Material:**  
Glass Reinforced PBT

**Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)

**Product Specification:**  
108-2184

**Application Specification:**  
114-13065



**Sealed Pin Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
8	Red	776495-1	776494-1
	Grey	776495-2	776494-2
	Yellow	776495-3	776494-3
	Green	776495-4	776494-4

**Sealed Pin Housings 2-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
8	Red	776538-1	776532-1
	Grey	776538-2	776532-2
	Yellow	776538-3	776532-3
	Green	776538-4	776532-4

2-Row Sealed Pin Housings (continued)

**Technical Features**

**No. of Positions:**

12 (2×6) Positions Assembly

**Housing Material:**

Glass Reinforced PBT

**Wire Size Range:**

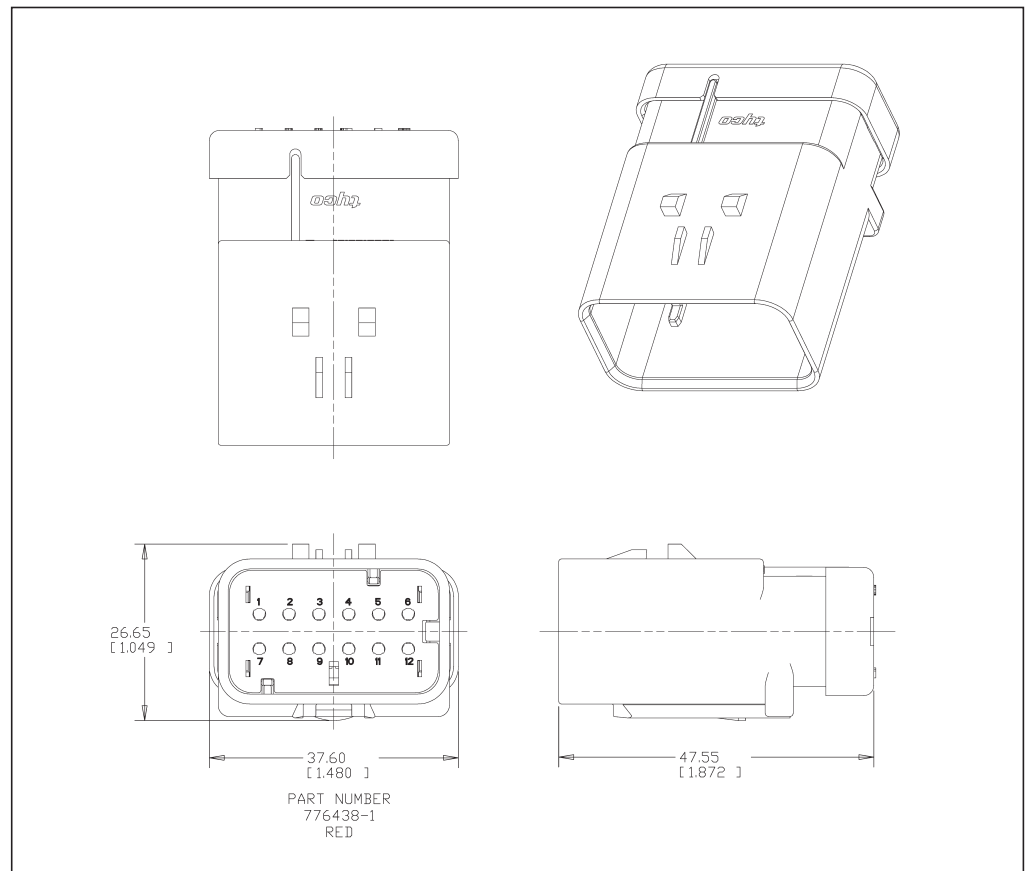
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)

**Product Specification:**

108-2184

**Application Specification:**

114-13065



**Sealed Pin Housings 2-Row**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
12	Red	776438-1	776437-1
	Grey	776438-2	776437-2
	Yellow	776438-3	776437-3
	Green	776438-4	776437-4

**Sealed Pin Housings 2-Row with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
12	Red	776539-1	776533-1
	Grey	776539-2	776533-2
	Yellow	776539-3	776533-3
	Green	776539-4	776533-4

**2-Row Sealed Pin Housings – Reversed Type**

**Technical Features**

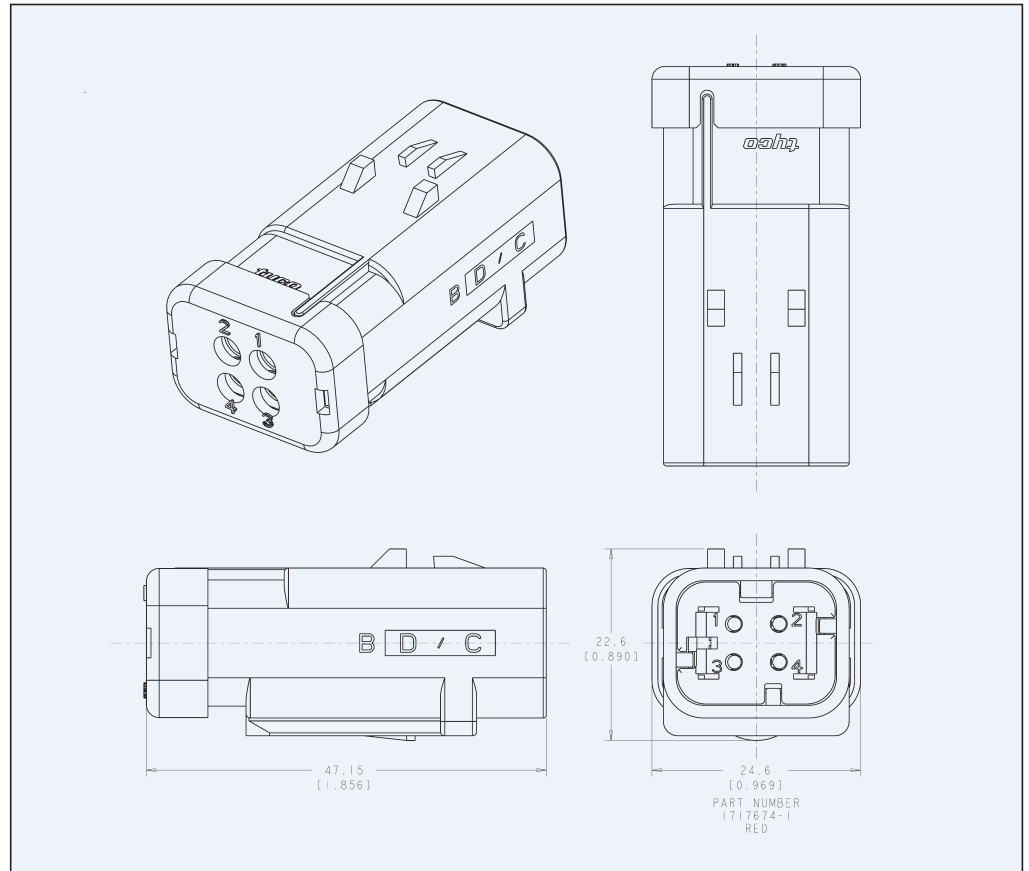
**No. of Positions:**  
4 (2×2) Positions Assembly

**Housing Material:**  
Glass Reinforced PBT

**Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>

**Product Specification:**  
108-2184

**Application Specification:**  
114-13065



**Sealed Pin Housings 2-Row – Reversed Type**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
4	Red	1717674-1	776487-1
	Grey	1717674-2	776487-2
	Yellow	1717674-3	776487-3
	Green	1717674-4	776487-4



**2-Row Sealed Pin Housings – Reversed Type with Reduced Diameter Wire Seal**

**Technical Features**

**No. of Positions:**

6 (2×3) Positions Assembly

**Housing Material:**

Glass Reinforced PBT

**Wire Size Range:**

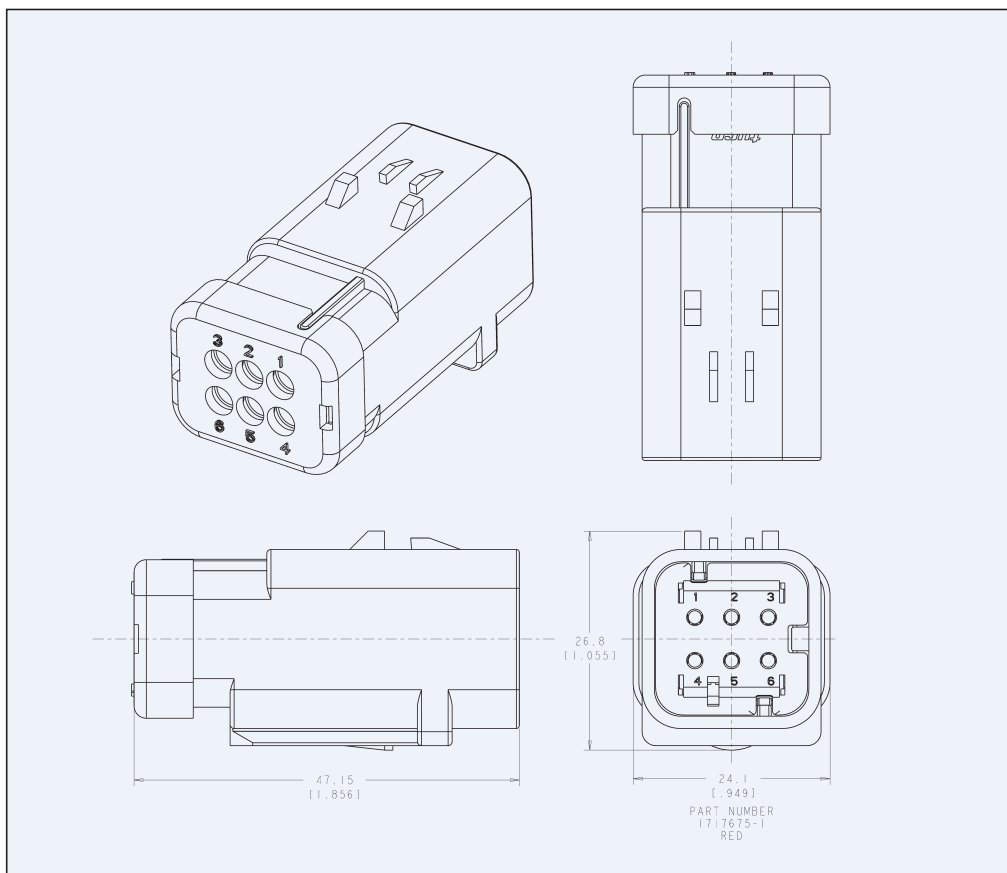
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)

**Product Specification:**

108-2184

**Application Specification:**

114-13065



**Sealed Pin Housings 2-Row – Reversed Type**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
6	Red	1717675-1	776433-1
	Grey	1717675-2	776433-2
	Yellow	1717675-3	776433-3

**Sealed Pin Housings 2-Row – Reversed Type with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
6	Red	1717975-1	776531-1
	Grey	1717975-2	776531-2
	Yellow	1717975-3	776531-3

**2-Row Sealed Pin Housings – Reversed Type**

**Technical Features**

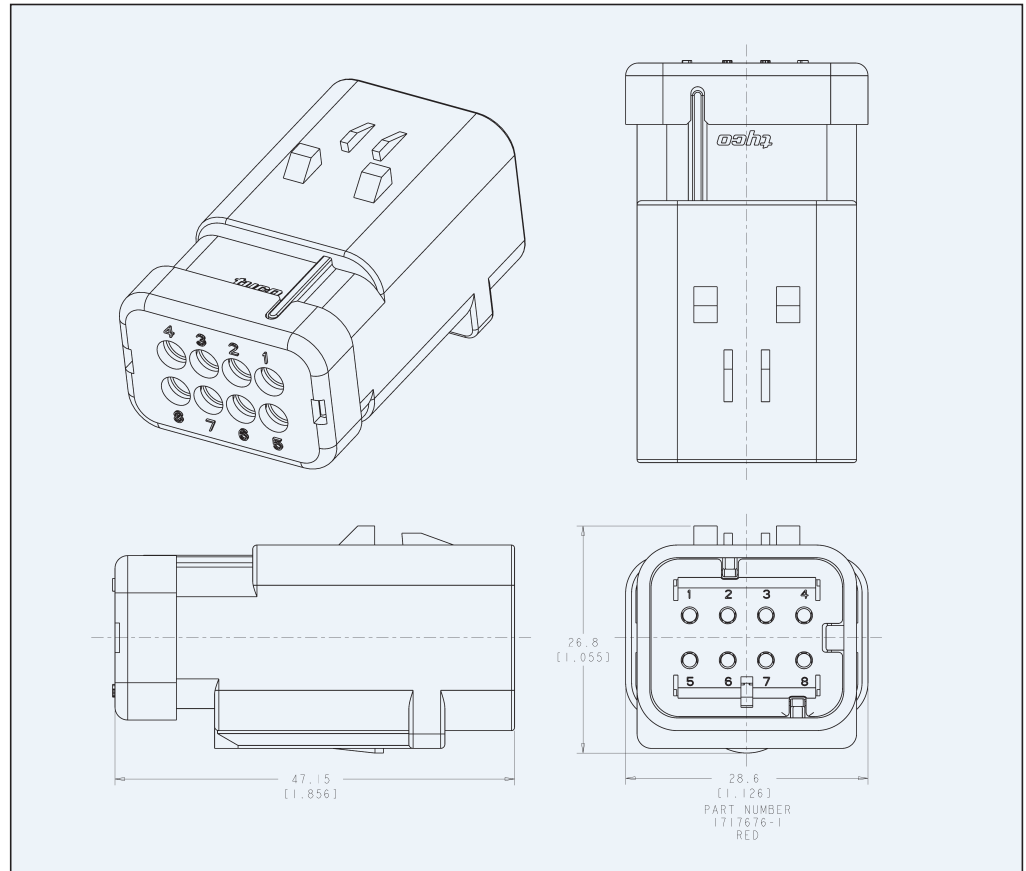
**No. of Positions:**  
8 (2×4) Positions Assembly

**Housing Material:**  
Glass Reinforced PBT

**Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>

**Product Specification:**  
108-2184

**Application Specification:**  
114-13065



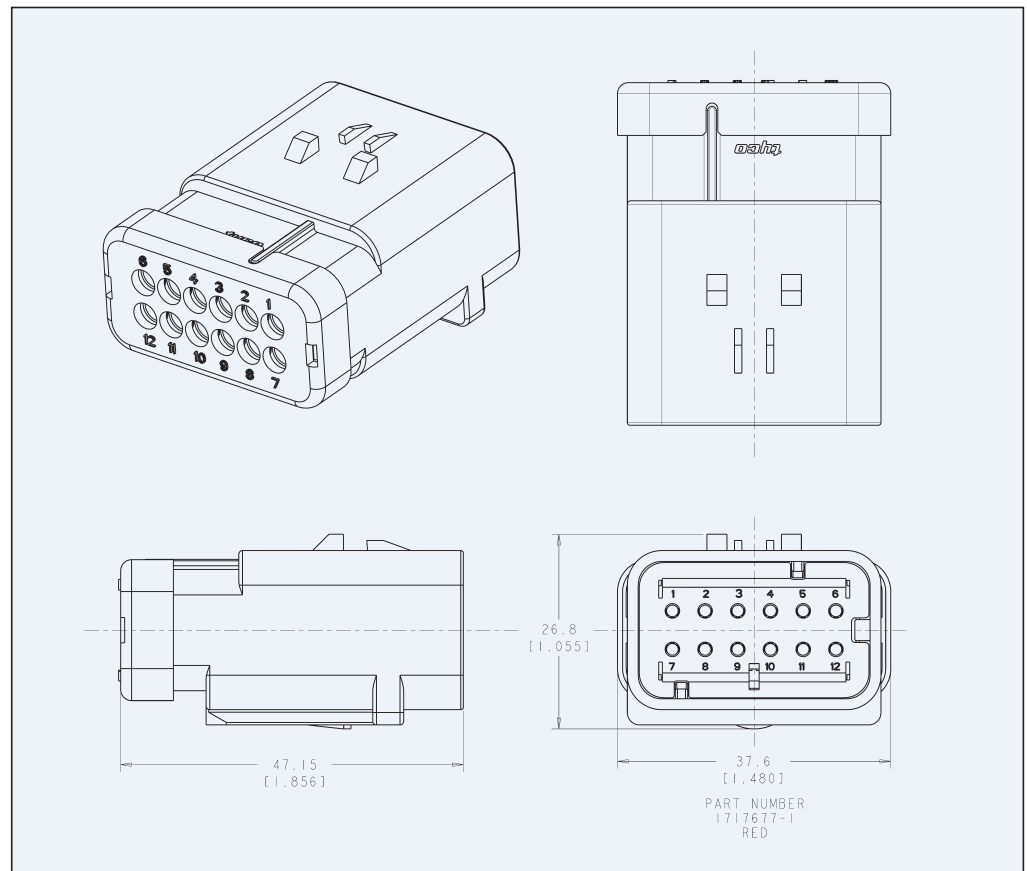
**Sealed Pin Housings 2-Row – Reversed Type**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
8	Red	1717676-1	776494-1
	Grey	1717676-2	776494-2
	Yellow	1717676-3	776494-3
	Green	1717676-4	776494-4

2-Row Sealed Pin Housings – Reversed Type (continued)

**Technical Features**

- No. of Positions:**  
12 (2×6) Positions Assembly
- Housing Material:**  
Glass Reinforced PBT
- Wire Size Range:**  
2.18–3.67 mm<sup>2</sup>  
1.30–2.54 mm<sup>2</sup>  
(with reduced diameter wire seal)
- Product Specification:**  
108-2184
- Application Specification:**  
114-13065



**Sealed Pin Housings 2-Row – Reversed Type**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
12	Red	1717677-1	776437-1
	Grey	1717677-2	776437-2
	Yellow	1717677-3	776437-3
	Green	1717677-4	776437-4

**Sealed Pin Housings 2-Row – Reversed Type with Reduced Diameter Wire Seal**

No. of Positions	Housing Color	Part Numbers	
		Pin Housing	Mating Receptacle Housing
12	Red	1717934-1	776533-1
	Grey	1717934-2	776533-2
	Yellow	1717934-3	776533-3
	Green	1717934-4	776533-4

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Engineering Notes

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