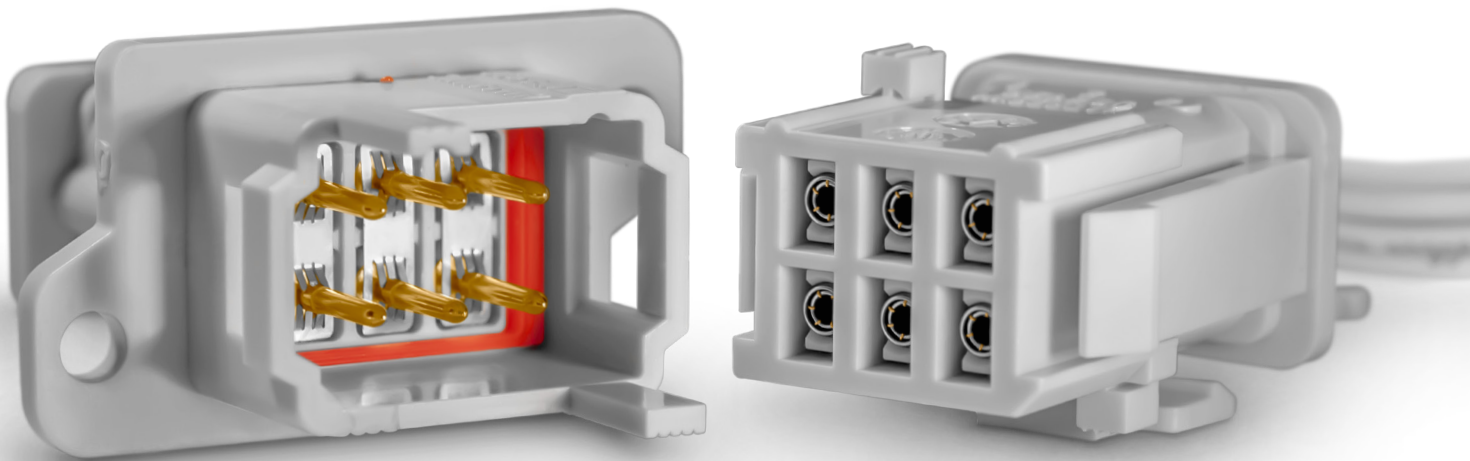


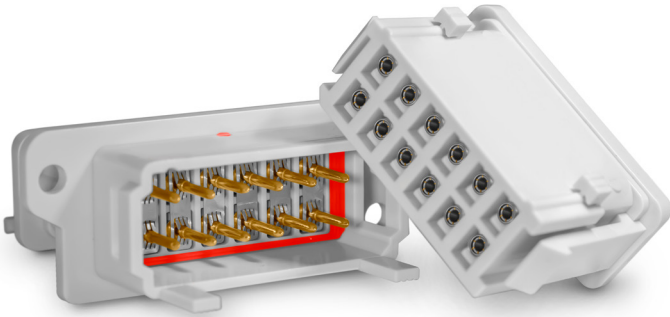
# REP Series

Environmentally-Sealed Rectangular Plastic Connectors



# REP Series

Environmentally - Sealed Rectangular Plastic Connectors



Optimised for  
use in rail and  
embedded  
applications

Smiths Interconnectors' REP Series, multi-pole, sealed, plastic connectors, provides a quick and secure connection of embedded equipment across a wide range of industries, such as sensors, brakes, lighting, air conditioning and communications found within industrial, rail, test and measurement, automotive, public works and defence.

The connector uses the proven Hypertac® hyperboloid contact technology which guarantees excellent reliability, even under high levels of shock and vibration and allows up to 500 mating cycles and high current rating up to 18 A. The REP connector range offers two main versions: with crimp termination contacts for cable harness applications and with straight or bent termination contacts for PCB mount applications. Both versions are available in 3 layouts: 2, 6 and 12 ways. The REP Series comes with a shunt accessory enabling electrical derivation inside the connector for transmission of information to different locations.

Only one contact can be used for cross section cables 0.5 mm<sup>2</sup> to 2.5 mm<sup>2</sup> (24-12 AWG) according to NFF 63-808 and EN 50-306 standards. No specific tool is required, with consequent reduction of supply chain, maintenance and cabling costs. Furthermore, for easy mounting, the connector includes polarized guides and provides several configurations: cable to cable, clips, front and back panel mount.

Connectors are available for delivery as a complete, tested pre-cabled solution according to customers' specifications.

## Features

### Compact, flexible design

- Standard insulators available in 2, 6 and 12-way configurations
- Crimp, straight and bent termination options

### Easy mounting and maintenance

- No specific tooling required for mounting
- One contact required for cross-section cables 0.50-2.50 mm<sup>2</sup> (24-12 AWG) to NFF 63-808 and EN 50-306 standards

### High quality, integrated features

- Overmoulded silicone grommet and interfacial seal delivers IP66 and IP67 protection
- Vibration resistance to EN 61-373, Category 2 standards
- Compliance to fire and smoke standards
- Improved polarised guides
- Three coding devices: cable-to-cable, clip locking, and front and back panel mount

### Hypertac® contact technology

- 360° wiping action
- Low insertion/extraction forces
- Minimal contact resistance

## Benefits

### Optimised for use in rail and embedded applications

- Space and weight savings
- Qualified to ensure high degree of safety
- Able to accept a large panel of cables with standard offering

### Complete, tested pre-cabled solutions available to customer's exact specifications

### Fast and reliable connection

- Ensure failure-free performance in extremely demanding environments
- Immunity to fretting caused by mating/unmating and shock and vibration

### Reduced cost of ownership

- Minimised supply chain, inventory and maintenance costs
- Lowered cabling costs

### Superior performance

- Hypertac® contacts ensure 30% higher current carrying capacity than contacts of the same size

# Technical Characteristics

## STANDARDS

<b>Contact Arrangements</b>	2, 6, 12	
<b>Contact Diameter</b>	Size 16: Ø 1.50 mm (0.059 in)	
<b>Weight (contacts included)</b>	REP102 with contacts: 7.74g REP202 with contacts: 8.18g REP402 with bent contacts: 9g REP402 with straight contacts: 8g REP506 with contacts: 17.9g REP606 with contacts: 19.3g REP406 with bent contacts: 15.5g REP406 with straight contacts: 13.5g REP512 with contacts: 32.8g REP612 with contacts: 33.9g REP412 with bent contacts: 25g REP412 with straight contacts: 22g	
<b>Coding Configurations</b>	Cable-to-cable, clip locking, panel mount	
<b>Polarisation</b>	180°	

## Materials & Plating

<b>Contacts</b>	Gold over nickel plating	
<b>Insulator</b>	Polycarbonate	
<b>Seal &amp; Grommet</b>	Overmoulded silicone	

## Mechanical & Environmental

<b>Contact Retention Force</b>	> 70 N	–
<b>Clip Locking Retention Force</b>	>190 N	–
<b>Mating Cycles</b>	> 500 cycles	–
<b>Temperature Range</b>	-75 °C to +100 °C (for crimp versions) -40 °C to +250 °C (for receptacles REP4xx)	–
<b>Vibration</b>	Category 2 (bogie installation)	EN 61-373
<b>Flammability</b>	I2 F1 Condition 4 HL3 for R22 30s Category 2	NF F 16-101 NF F 16-102 EN 45545-2 EN ISO 11925-2 UNI CEI 11170-3
<b>Salt Spray</b>	V-0	UL94
<b>Fluid Resistance</b>	> 96 hours Cleaning substances, gasoline/oil, acids,	ASTM-B-117 IP66, IP67

## Electrical

<b>Current Rating</b>	18 A	–
<b>Voltage Rating</b>	230 V (400 V with plastic dummy contacts)	EN 50124-1, pollution degree 3
<b>Dielectric Withstanding Voltage</b>	2725 V	EN 50124-1
<b>Contact Resistance</b>	≤ 2.5 mΩ	–
<b>Insulation Resistance</b>	≥ 5x10 <sup>3</sup> MΩ	–

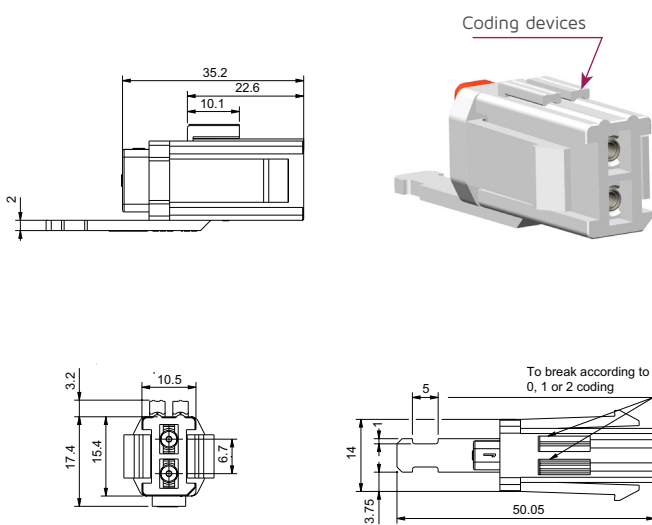
# Dimensions 2,6,12-Way Connectors

## 2 Way Plugs & Receptacles

Cable Harness, Crimp Termination

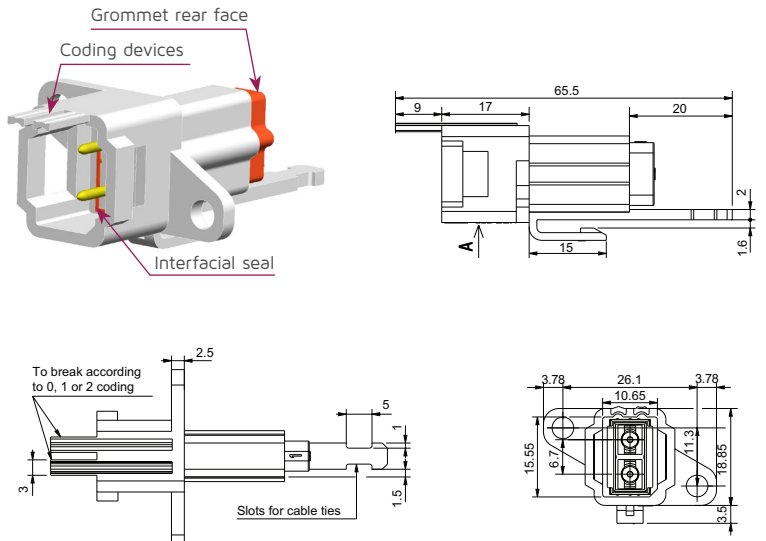
### Female plug

P/N: REP-102-XX-20-XX



### Male receptacle

P/N: REP-202-XX-20-XX

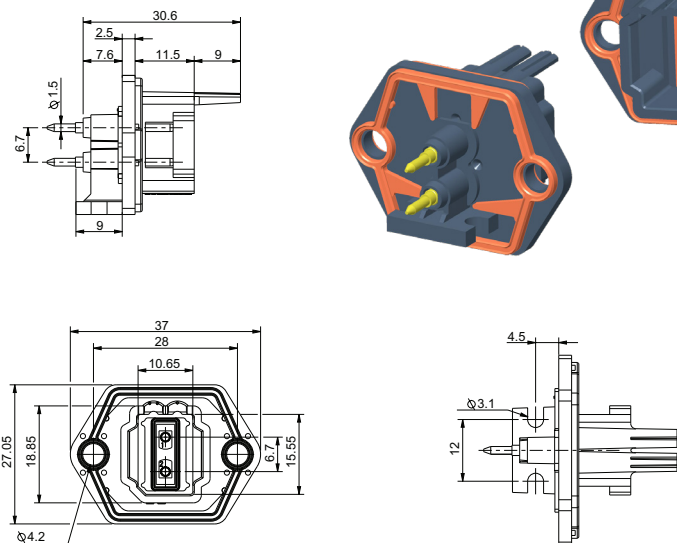


## 2 Way Receptacles

PCB/Panel Mount, Straight & Bent Termination

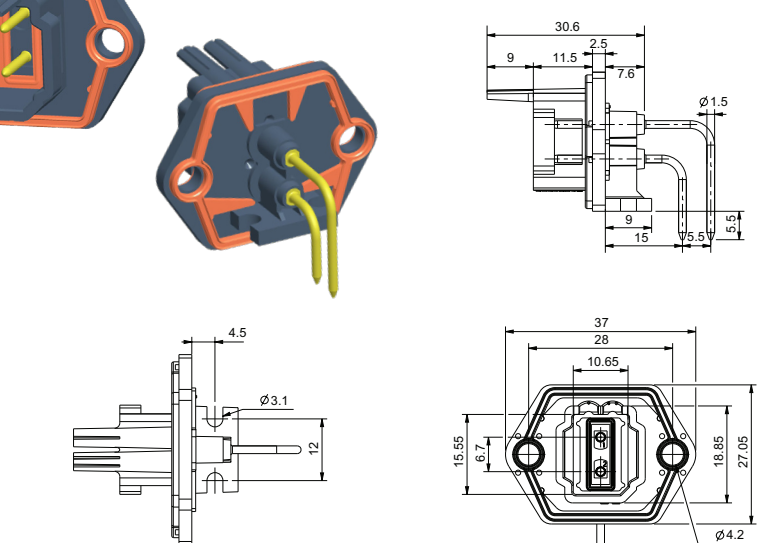
### Straight male receptacle

P/N: REP-402-XX-30-XX



### Bent male receptacle

P/N: REP-402-XX-10-XX

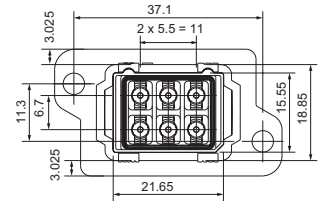
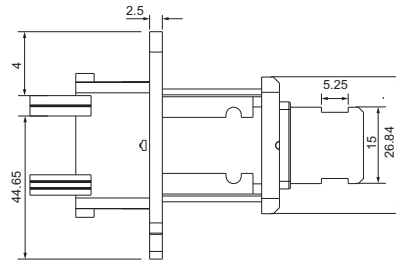
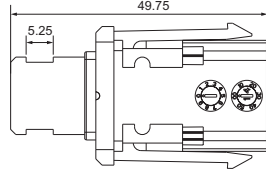
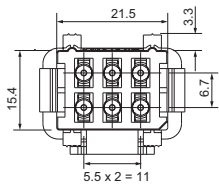
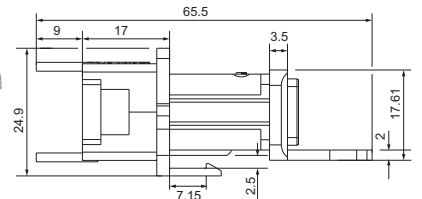
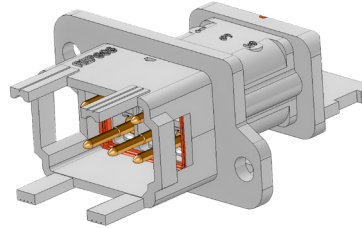
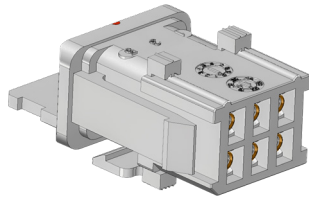
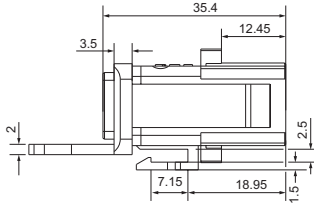


## 6 Way Plugs & Receptacles

Cable Harness, Crimp Termination

### Female plug

P/N: REP-506-XX-20-XX

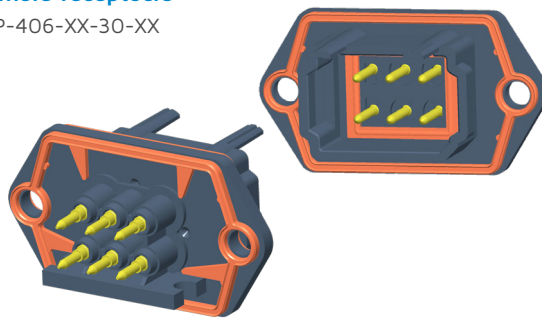
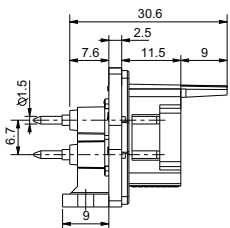


## 6 Way Receptacles

PCB/Panel Mount, Straight & Bent Termination

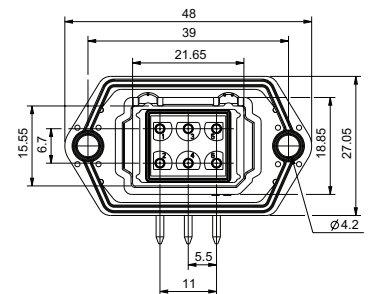
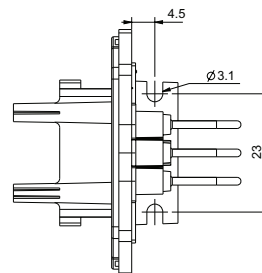
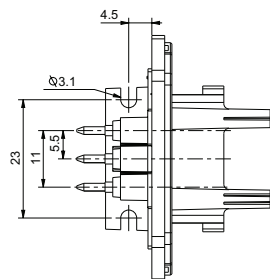
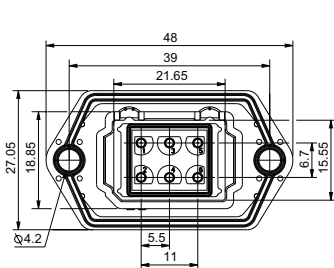
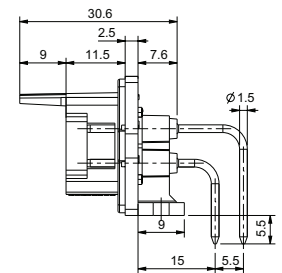
### Straight male receptacle

P/N: REP-406-XX-30-XX



### Bent male receptacle

P/N: REP-406-XX-10-XX



# 12 Way Plugs & Receptacles

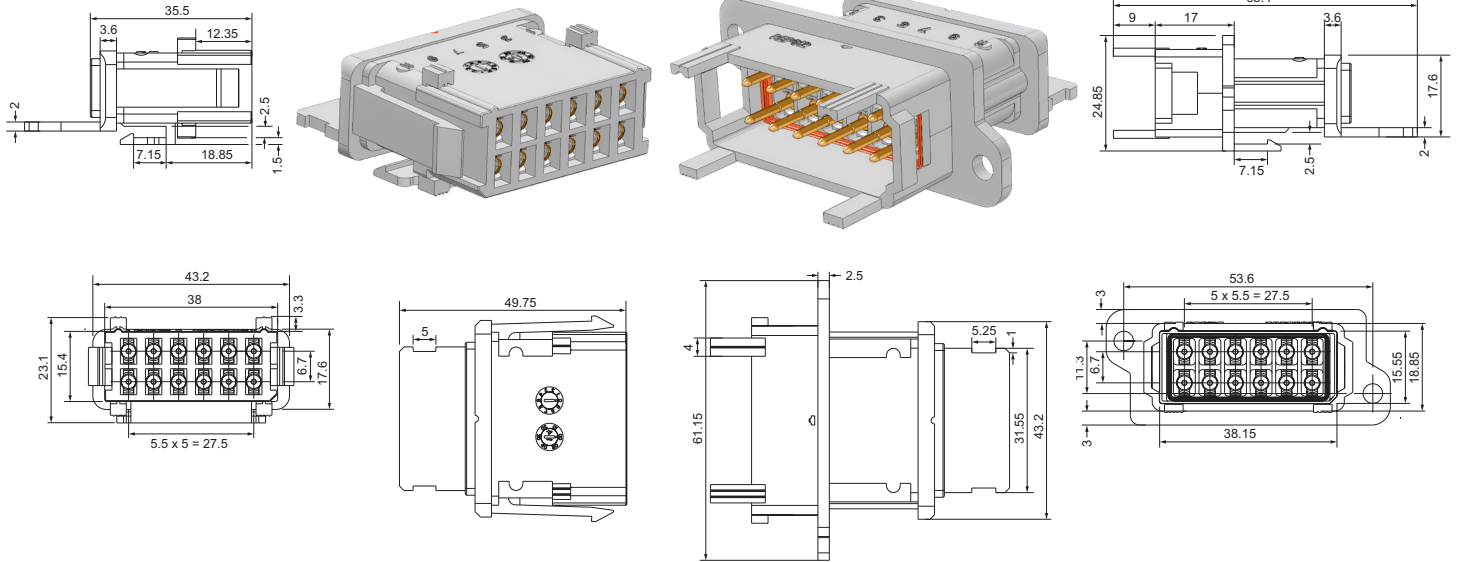
Cable Harness, Crimp Termination

## Female plug

P/N: REP-512-XX-20-XX

## Male receptacle

P/N: REP-612-XX-20-XX



# 12 Way Receptacles

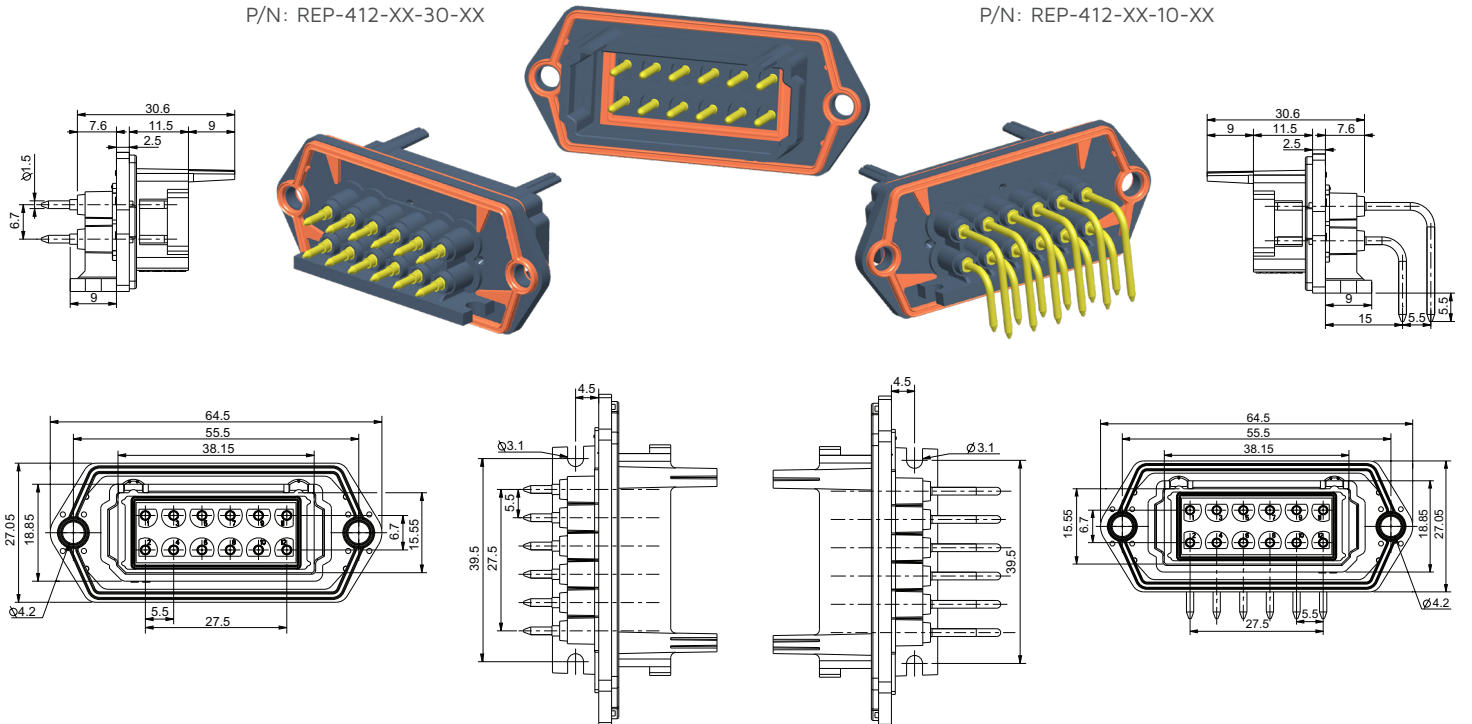
PCB/Panel Mount, Straight & Bent Termination

## Straight male receptacle

P/N: REP-412-XX-30-XX

## Bent male receptacle

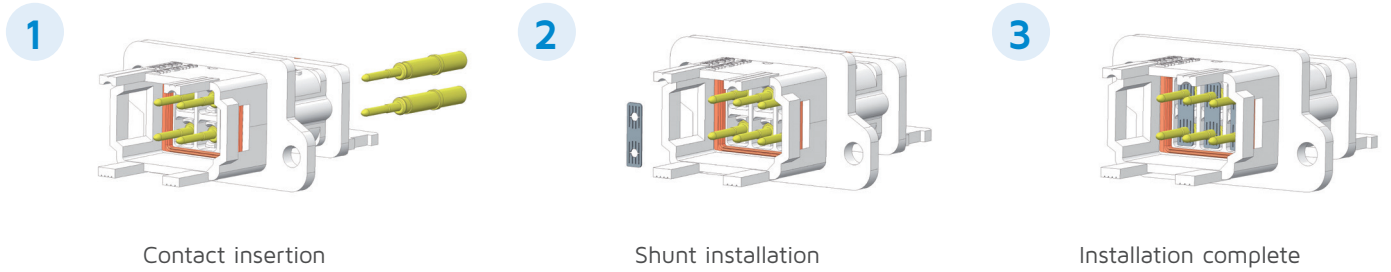
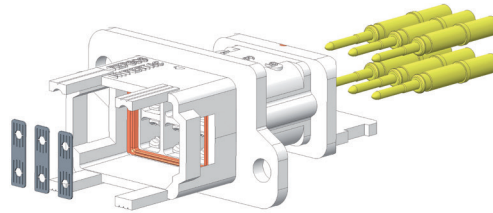
P/N: REP-412-XX-10-XX



Dimensions are in mm | All specifications are subject to change without notice

# Assembly Contacts & Accessories

## Contact & Shunt Assembly

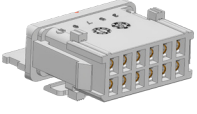


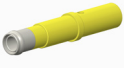
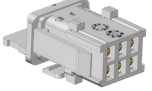

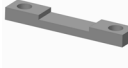
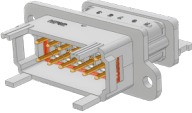






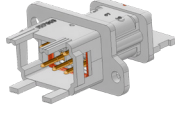


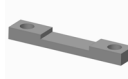



Contact insertion

Shunt installation

Installation complete

## Accessories

CONNECTOR	ACCESSORIES					CONTACTS	TOOLING EQUIPMENT		
	Cable Retainer	Panel Seal	Panel Mount Bracket	Dummy Contacts <sup>(1)</sup>	Filler Plug		Crimping Tool	Locator	Selector Positions Wire Cross Sections
 <b>Female plug, 12-way</b> REP 512	 REP 007-12		 REP 003-12			 0151832-20-N1	Astro-tool TGV 101	TGV 202 rouge	Position 5: AWG 20-18 Position 6: AWG 16-14 Position 7: AWG 14
 <b>Female plug, 6-way</b> REP 506	 REP 007-06		 REP 003-06				Daniels FT8	SH 463 rouge	Extraction Tool SD-0150000012
 <b>Male receptacle, 12-way</b> REP 612	 REP 007-12	 REP 006-12	 REP 003-12	 REP 002	 REP 001	 0151081-20-1G	Astro-tool TGV 101	TGV 202 rouge	Position 5: AWG 20-18 Position 6: AWG 16-14 Position 7: AWG 14
 <b>Male receptacle, 6-way</b> REP 606	 REP 007-06	 REP 006-06	 REP 003-06			 REP 901	Daniels FT8	SH 463 rouge	Extraction Tool SD-0150000012

(1) Use up to 400 V

Dimensions are in mm | All specifications are subject to change without notice

# How To Order



REP



1

2

3

4

5

<b>1 Series</b>	REP Series [fixed]												
<b>2 Layout</b>	<table border="0"> <tr> <td>1 0 2 Plug - 2 socket contacts</td> <td>2 0 2 Receptacle - 2 pin contacts</td> </tr> <tr> <td>4 0 2 Receptacle for pcb or panel mount - 2 pin contacts</td> <td></td> </tr> <tr> <td>4 0 6 Receptacle for pcb or panel mount - 6 pin contacts</td> <td></td> </tr> <tr> <td>4 1 2 Receptacle for pcb or panel mount - 12 pin contacts</td> <td></td> </tr> <tr> <td>5 0 6 Plug - 6 socket contacts</td> <td>5 1 2 Plug - 12 socket contacts</td> </tr> <tr> <td>6 0 6 Receptacle - 6 pin contacts</td> <td>6 1 2 Receptacle - 12 pin contacts</td> </tr> </table>	1 0 2 Plug - 2 socket contacts	2 0 2 Receptacle - 2 pin contacts	4 0 2 Receptacle for pcb or panel mount - 2 pin contacts		4 0 6 Receptacle for pcb or panel mount - 6 pin contacts		4 1 2 Receptacle for pcb or panel mount - 12 pin contacts		5 0 6 Plug - 6 socket contacts	5 1 2 Plug - 12 socket contacts	6 0 6 Receptacle - 6 pin contacts	6 1 2 Receptacle - 12 pin contacts
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6 0 6 Receptacle - 6 pin contacts	6 1 2 Receptacle - 12 pin contacts												
<b>3 Part - Polarity</b>	<table border="0"> <tr> <td>0 3 Plug without contact</td> <td>0 4 Receptacle without contact</td> </tr> <tr> <td>1 2 Female plug with contacts</td> <td>2 3 Male receptacle with contacts</td> </tr> <tr> <td>2 7 Male receptacle with tinned contacts</td> <td></td> </tr> <tr> <td>2 B Male receptacle with RoHS tinned contacts</td> <td></td> </tr> </table>	0 3 Plug without contact	0 4 Receptacle without contact	1 2 Female plug with contacts	2 3 Male receptacle with contacts	2 7 Male receptacle with tinned contacts		2 B Male receptacle with RoHS tinned contacts					
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<b>4 Termination Style</b>	<table border="0"> <tr> <td>0 0 Without contact</td> </tr> <tr> <td>1 0 Bent termination contact for REP 402, 406 and 412</td> </tr> <tr> <td>2 0 Crimp contact 24-12 AWG for REP 102, 506, 512, 202, 606 and 612</td> </tr> <tr> <td>3 0 Straight termination contact for REP 402, 406 and 412</td> </tr> </table>	0 0 Without contact	1 0 Bent termination contact for REP 402, 406 and 412	2 0 Crimp contact 24-12 AWG for REP 102, 506, 512, 202, 606 and 612	3 0 Straight termination contact for REP 402, 406 and 412								
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<b>5 Accessories</b>	<table border="0"> <tr> <td>0 0 Without accessory</td> </tr> <tr> <td>0 1 Filler plug for REP 102, 506, 512, 202, 606 and 612</td> </tr> <tr> <td>0 2 Plastic dummy contact for REP 102, 506, 512, 202, 606 and 612</td> </tr> <tr> <td>0 3 Bracket for panel mounting for REP 202, 606 and 612</td> </tr> <tr> <td>0 4 Spacer for straight termination contact for REP 402, 406 and 412</td> </tr> <tr> <td>0 7 With accessory for cable retainer for REP 606 and 612</td> </tr> <tr> <td>0 9 With shunts for REP 606 and 612</td> </tr> <tr> <td>1 0 With panel seal for REP 606 and 612</td> </tr> </table>	0 0 Without accessory	0 1 Filler plug for REP 102, 506, 512, 202, 606 and 612	0 2 Plastic dummy contact for REP 102, 506, 512, 202, 606 and 612	0 3 Bracket for panel mounting for REP 202, 606 and 612	0 4 Spacer for straight termination contact for REP 402, 406 and 412	0 7 With accessory for cable retainer for REP 606 and 612	0 9 With shunts for REP 606 and 612	1 0 With panel seal for REP 606 and 612				
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