

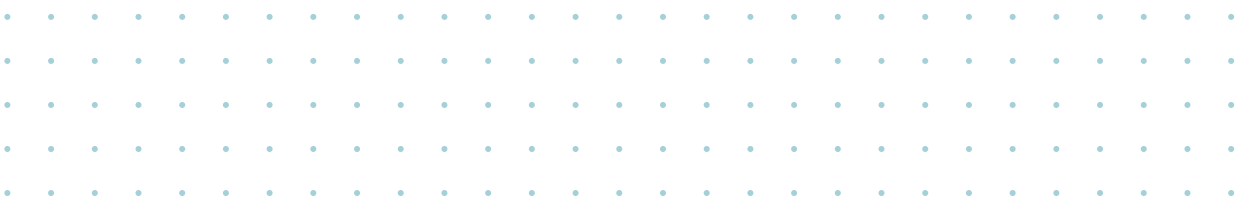
# LOW VOLTAGE CONNECTORS

Designed for the future of mobility



• APTIV •





# AT APTIV, WE ARE BORN TO MOVE

Aptiv is a global technology company that develops safer, greener and more connected solutions enabling a more sustainable future of mobility.

Headquartered in Dublin, Aptiv has approximately 200,000 employees and operates 11 technical centers, as well as manufacturing sites and customer support centers in 48 countries.

[VISIT APTIV.COM](https://www.aptiv.com)

## INTELLIGENTLY CONNECTED FROM END TO END ONE OF THE MOST COMPREHENSIVE PORTFOLIO IN THE MARKET

At Aptiv, we understand the full electrical architecture of today's vehicles. This unique perspective gives us the expertise to design the most robust and innovative connection systems available, optimizing the cost and performance of the entire electrical system.

Aptiv never stops innovating when it comes to our complete portfolio of automotive connectors, terminals, seals and headers. Our wide range of robust, reliable and easy-to-use connection systems can address any application in the vehicle and enable future advancements in automotive design.

# A COMPREHENSIVE PRODUCT PORTFOLIO



## TERMINAL SYSTEMS

Aptiv's full range of terminals provides the perfect combination of electrical and provides mechanical performance for nearly any automotive application.

Our terminal options include standard one-piece and two-piece terminals, ring terminals, bus bars, and more. We also offer a variety of plating options as well as terminals that support single wire sealing.



## HOUSINGS

Aptiv offers a large variety of connectors and housings, with options for device (wire-to-board) and in-line (wire-to-wire) connections.

Our portfolio includes solutions for connections in the powertrain & engine area, active and passive safety systems, body and chassis electronics, multimedia systems, and interior functions, with various termination options to meet application requirements.

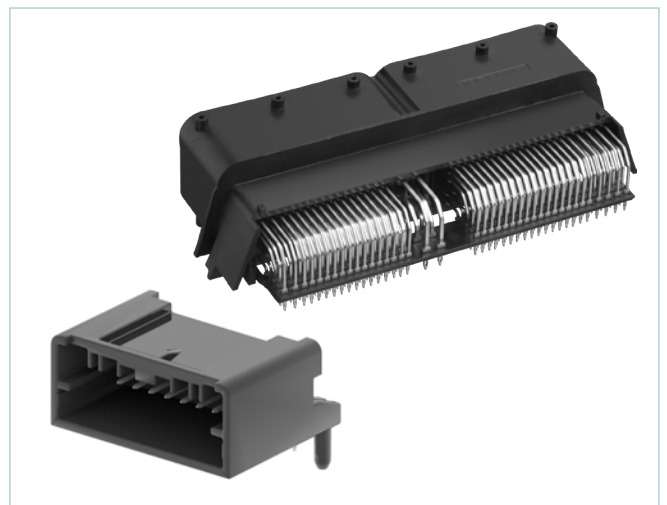


## SEALS

Aptiv manufactures a broad spectrum of cable seals which offer protection from particle and moisture intrusion.

Aptiv offers more than 250 different single wire seals for all types of connector cavities.

We have in-house capability of production and a global footprint.



## HEADERS

Aptiv offers a wide range of state of the art headers featuring high pin count solutions for harsh environment applications as well as solder & press-fit (compliant pin) applications.

We also offer miniaturized headers featuring 0.5 pitch.

# TABLE OF CONTENTS

|                                          |             |
|------------------------------------------|-------------|
| <b>Terminals selector guide</b>          | <b>p.10</b> |
| <b>APEX® Terminals and Connectors</b>    | <b>p.12</b> |
| <b>APEX® Connectors selector guide</b>   | p.14        |
| APEX® 1.2 Female Terminals               | p.16        |
| APEX® 1.5 Terminals                      | p.18        |
| APEX® 150 Terminals                      | p.20        |
| APEX® 2.8 Terminals                      | p.22        |
| APEX® 6.35 Terminals                     | p.24        |
| APEX® 9.5 Terminals                      | p.26        |
| APEX® 1.2 SensoMate™ Series              | p.28        |
| APEX® 150 Sealed Series                  | p.30        |
| APEX® 2.8 SensoMate™ Series              | p.32        |
| APEX® 2.8 Sealed Series                  | p.34        |
| APEX® 2.8 Unsealed Series                | p.36        |
| APEX® Mixed Series                       | p.38        |
| APEX® ErgoMate™ Series                   | p.40        |
| APEX® Halogen Bulb Series                | p.42        |
| <b>CMC Connectors and Headers</b>        | <b>p.44</b> |
| CMC Connectors 32, 48, 64, 86 Way        | p.46        |
| CMC Headers 32, 48, 64 Way               | p.48        |
| CMC Headers 112 Way                      | p.50        |
| <b>CTS Terminals and Connectors</b>      | <b>p.52</b> |
| <b>CTS Connectors selector guide</b>     | p.54        |
| CTS 0.5 Locking Lance Terminals          | p.56        |
| CTS 0.5 Female Clean Body Terminals      | p.58        |
| CTS 1.2 Female Locking Lance Terminals   | p.60        |
| CTS 1.2 Male Locking Lance Terminals     | p.62        |
| CTS 1.5 Locking Lance Sealed Terminals   | p.64        |
| CTS 1.5 Locking Lance Unsealed Terminals | p.66        |
| CTS 2.8 Locking Lance Terminals          | p.68        |
| CTS 6.3 Female Locking Lance Terminals   | p.70        |
| CTS 9.5 Female Locking Lance Terminals   | p.72        |
| CTS 12 Female Locking Lance Terminals    | p.74        |
| NanoPack™ CTS Unsealed Series USCAR      | p.76        |
| NanoPack™ CTS Unsealed Series AK         | p.78        |
| NanoPack™ CTS Sealed Series AK           | p.80        |
| CTS 1.2 SensoMate™ Series                | p.82        |
| CTS 2.8 Sealed Series                    | p.84        |

|                                     |              |
|-------------------------------------|--------------|
| <b>CTCS Connectors</b>              | <b>p.86</b>  |
| CTCS Connectors selector guide      | p.88         |
| CTCS Unsealed Series                | p.90         |
| CTCS SP Series                      | p.92         |
| CTCS XP Series                      | p.94         |
| <b>ErgoMate™ Connectors</b>         | <b>p.96</b>  |
| ErgoMate™ 38 Way                    | p.98         |
| ErgoMate™ 55 Way                    | p.100        |
| <b>GTS Terminals and Connectors</b> | <b>p.102</b> |
| GTS 0.64 Terminals                  | p.104        |
| GTS 1.5 Terminals                   | p.106        |
| GTS 1.5 SensoMate™ Series           | p.108        |
| <b>HDK Terminals and Connectors</b> | <b>p.110</b> |
| HDK Female 1.2 Terminals            | p.112        |
| HDK Female 2.8 Terminals            | p.114        |
| HDK 1.2 Sealed Series               | p.116        |
| HDK 2.8 Sealed Series               | p.118        |
| <b>HES Connectors</b>               | <b>p.120</b> |
| HES Series                          | p.122        |
| <b>OCS Terminals and Connectors</b> | <b>p.124</b> |
| OCS Connectors selector guide       | p.126        |
| OCS 0.64 Terminals                  | p.128        |
| OCS 1.2 Terminals                   | p.130        |
| OCS 1.5 Sealed Terminals            | p.132        |
| OCS 1.5 Unsealed Terminals          | p.134        |
| OCS 2.8 Sealed Terminals            | p.136        |
| OCS 2.8 Unsealed Terminals          | p.138        |
| OCS 1.2 Unsealed Series             | p.140        |
| OCS 1.5 Sealed Series               | p.142        |
| OCS 1.5 Unsealed Series             | p.144        |





# TABLE OF CONTENTS

|                                                |              |
|------------------------------------------------|--------------|
| <b>SICMA Terminals, Connectors and Headers</b> | <b>p.146</b> |
| <b>SICMA Connectors selector guide</b>         | p.148        |
| SICMA 0.64 Terminals                           | p.150        |
| SICMA 1.5 Terminals                            | p.152        |
| SICMA 2.8 Terminals                            | p.154        |
| SICMA Inline Sealed Series                     | p.156        |
| SICMA Inline Unsealed Series                   | p.158        |
| SICMA Mini-Sealed Series                       | p.160        |
| SICMA Panel-Through Sealed Series              | p.162        |
| SICMA Panel-Through Unsealed Series            | p.164        |
| SICMA 1.5 SensoMate™ Series                    | p.166        |
| SICMA Sealed Relays                            | p.168        |
| SICMA OBD (On-Board Diagnostics) Series        | p.170        |
| SICMA Headers Interconnect Sealed              | p.172        |
| <b>Headers</b>                                 | <b>p.174</b> |
| CMC Headers 32, 48, 64 Way                     | p.176        |
| CMC Headers 112 Way                            | p.178        |
| SICMA Headers Sealed                           | p.180        |





# TERMINALS

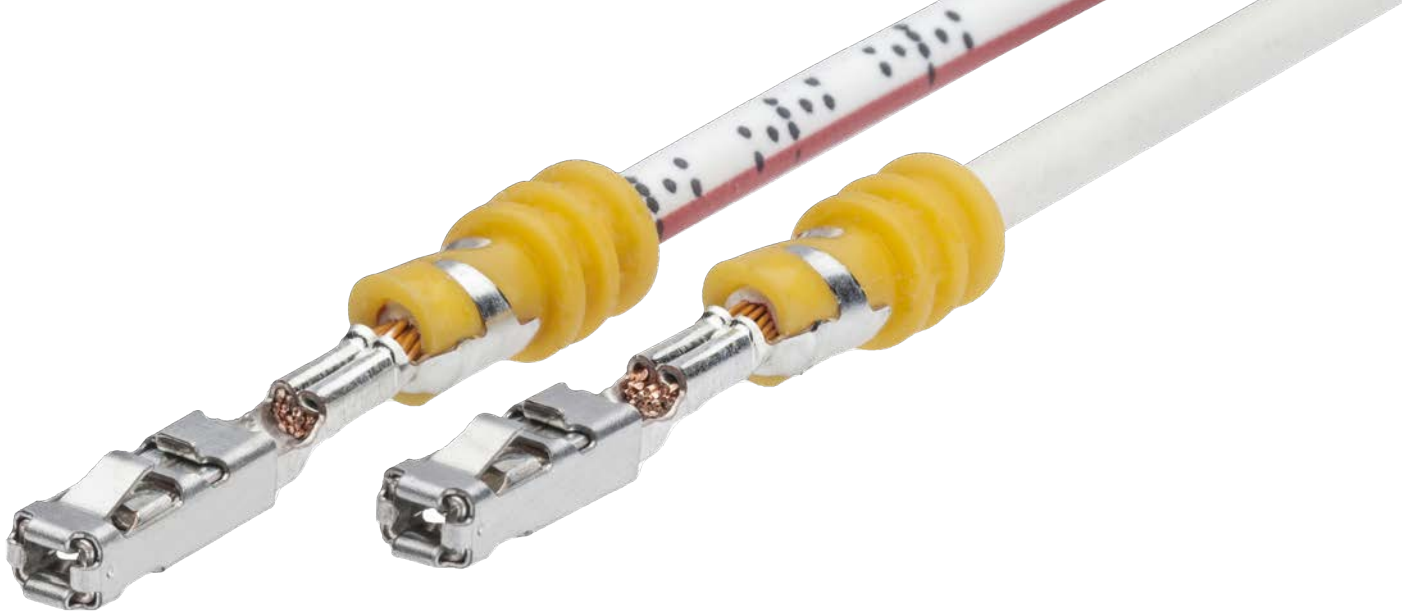
## SELECTOR GUIDE

Aptiv's terminals provide the perfect combination of electrical and mechanical performance for nearly any automotive application. Our terminal options include **standard one- and two-piece terminals, ring terminals, bus bars**, and more.

We also offer a variety of plating options as well as terminals that support single wire sealing.

|       | Miniature |         |        |
|-------|-----------|---------|--------|
|       | 0.5 mm    | 0.64 mm | 1.2 mm |
| APEX  |           |         | 18 A   |
| CTS   | 3 A       |         | 16.9 A |
| GTS   |           | 13 A    |        |
| HDK   |           |         | 11 A   |
| OCS   |           | 7.5 A   | 16.5 A |
| SICMA |           | 13 A    |        |

Maximum current carrying capacity at 80°C is given for reference only. This document is non contractual



| Mid Current |        | Power  |        |       |
|-------------|--------|--------|--------|-------|
| 1.5 mm      | 2.8 mm | 6.3 mm | 9.5 mm | 12 mm |
| 18 A        | 40 A   | 55 A   | 120 A  |       |
| 19 A        | 25 A   | 60 A   | 63 A   | 165 A |
| 27 A        |        |        |        |       |
| 29.5 A      |        |        |        |       |
| 22 A        | 32 A   |        |        |       |
| 19 A        | 22.6 A |        |        |       |







# APEX<sup>®</sup> TERMINALS AND CONNECTORS



# APEX<sup>®</sup> CONNECTORS

## SELECTOR GUIDE

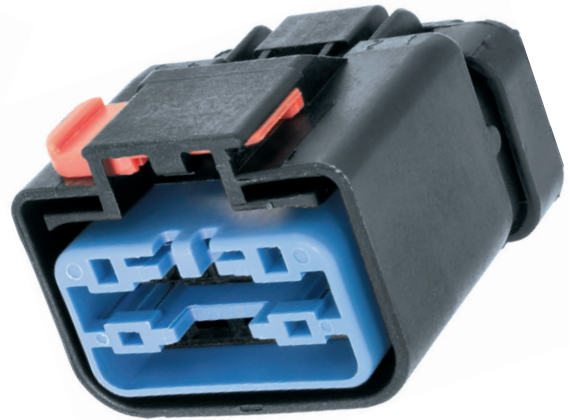
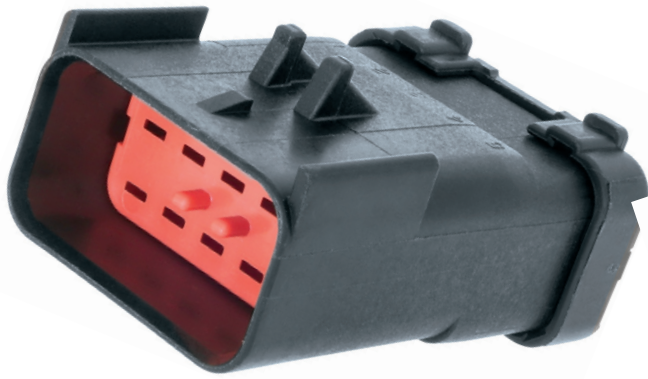
APEX electrical connection systems incorporates proven technology for harsh environments in automotive, off-highway, and specialty vehicles. These connectors are designed for applications where heat, vibration and moisture are a concern.

Our time-tested high performance and ergonomic solution delivering **the industry's highest current rating.**

- Heavy-duty performance
- High current capacity
- Ergonomic design

|                   |  |  |  |  |  |
|-------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Product Series    | APEX <sup>®</sup> 1.2 SensoMate™                                                   | APEX <sup>®</sup> 150 Sealed                                                       | APEX <sup>®</sup> 2.8 SensoMate™                                                    | APEX <sup>®</sup> 2.8 Sealed                                                         | APEX <sup>®</sup> 2.8 Unsealed                                                       |
| Applications      | On-engine sensors and actuators                                                    | Sealed inline and device applications                                              | On-engine sensors                                                                   | On-engine sensors                                                                    | Unsealed inline and device applications                                              |
| Blade Size        | 1.2                                                                                | 1.5                                                                                | 2.8                                                                                 | 2.8                                                                                  | 2.8                                                                                  |
| # of Cavities     | 2, 3, 4, 5, 6                                                                      | 10, 16                                                                             | 2, 3, 4                                                                             | 2, 3, 4, 5, 6, 10, 14                                                                | 2, 3, 4, 5, 6, 10, 14                                                                |
| Gender            | F, M (2 to 4)                                                                      | F, M                                                                               | F                                                                                   | F, M                                                                                 | F, M                                                                                 |
| Temperature Class | T4                                                                                 | T3                                                                                 | T3                                                                                  | T3                                                                                   | T3                                                                                   |
| IP Rating         | IP69K                                                                              | IP69K                                                                              | IP69K                                                                               | IP68                                                                                 | NA                                                                                   |
| CPA               | Optional                                                                           | Optional                                                                           | Optional                                                                            | Optional                                                                             | Optional                                                                             |
| See Pages         | 28-29                                                                              | 30-31                                                                              | 32-33                                                                               | 34-35                                                                                | 36-37                                                                                |

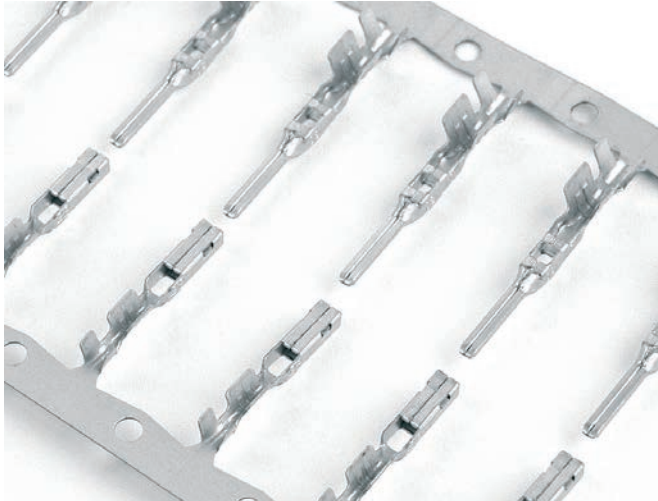
*This document is non-contractual and is for information purpose only*



|                                                                                    |                                                                                    |                                                                                    |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  |  |  |
| <b>APEX®<br/>Mixed</b>                                                             | <b>APEX®<br/>ErgoMate™</b>                                                         | <b>APEX®<br/>Halogen<br/>Bulb</b>                                                  |
| Sealed inline applications                                                         | Sealed inline applications                                                         | Halogen Bulb                                                                       |
| 1.5 and 2.8                                                                        | 1.5 and 2.8                                                                        | 2.8                                                                                |
| 14                                                                                 | 24                                                                                 | 2                                                                                  |
| F, M                                                                               | F, M                                                                               | F                                                                                  |
| T3                                                                                 | T3                                                                                 | T4                                                                                 |
| IP69K                                                                              | IP69K                                                                              | IP69K                                                                              |
| Optional                                                                           | Optional                                                                           | Optional                                                                           |
| 38-39                                                                              | 40-41                                                                              | 42-43                                                                              |



# APEX<sup>®</sup> 1.2 FEMALE TERMINALS



APEX<sup>®</sup> 1.2 Female & Male Terminals

## BENEFITS

- Heavy-duty performance
- Highest current rating

## FEATURES

- Two-piece construction
- Integrated floating spring made of beryllium copper or copper nickel silicon



## AVAILABLE CONFIGURATIONS

|                       |                                       |
|-----------------------|---------------------------------------|
| Terminal Type         | Box & Blade                           |
| Terminal Construction | Two-piece                             |
| Locking Mechanism     | Tangless / Lanceless                  |
| Terminal Cavity       | APEX <sup>®</sup> 1.2 SensoMate™      |
| Blade Size (mm)       | 1.2                                   |
| Wire Gage Range (AWG) | 22 - 16                               |
| Wire Gage Range (mm²) | 0.35 - 1.5                            |
| Genders               | Female, Male                          |
| Sealing Options       | Unsealed, Mat Sealed,<br>Cable Sealed |
| Plating Options       | Sn, Sn/Ag, Ag, Au                     |



## CHARACTERISTICS

|                        |          |
|------------------------|----------|
| Contact Resistance     | < 0.5 mΩ |
| Contact Mating Force   | < 5 N    |
| Contact Unmating Force | < 1 N    |



MAX  
TEMP



MAX  
VIBRATION



MAX  
CURRENT



| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm²) | Part number | Other available platings | Other available configurations |
|--------------|--------|---------|-----------------------|-----------------------|-------------|--------------------------|--------------------------------|
| Unsealed     | F      | Au      | 20                    | 0.35 - 0.5            | 15504560    | -                        | -                              |
| Cable Sealed | F      | Sn      | 20                    | 0.35 - 0.5            | 13806233    | Sn/Ag, Ag, Au            | Rewind A                       |
| Cable Sealed | F      | Sn      | 18                    | 0.75 - 1.5            | 13576990    | Sn/Ag, Ag, Au            | Rewind A                       |

Please, contact an Aptiv representative for the full part number list.



COMPATIBLE SEALS

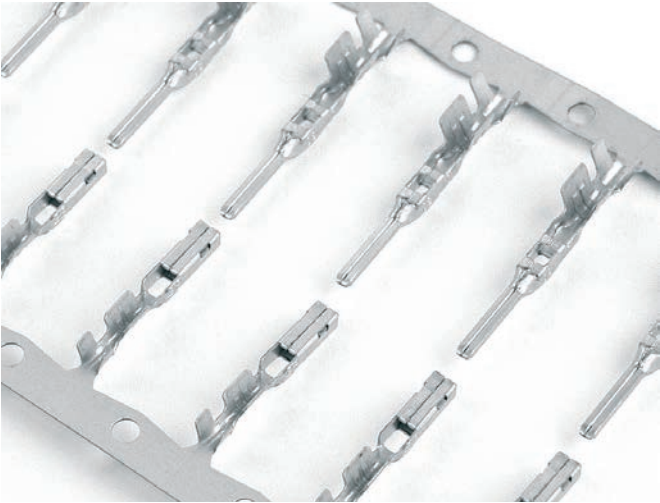
| Type       | Applicable Wire Size (mm²) | Color | Restraint Ring                                                                     | Part Number |
|------------|----------------------------|-------|------------------------------------------------------------------------------------|-------------|
|            |                            |       |  |             |
| Cable Seal | 0.35 - 0.5                 | Gray  | Yes                                                                                | 33318278    |
| Cable Seal | 0.5 - 0.85                 | Gray  | Yes                                                                                | 33318279    |
| Cable Seal | 1.0 - 1.5                  | Black | Yes                                                                                | 33318275    |



COMPATIBLE WITH



# APEX<sup>®</sup> 1.5 TERMINALS



APEX<sup>®</sup> 1.5 Female & Male Terminals

## BENEFITS

- Heavy-duty performance
- Highest current rating

## FEATURES

- Two-piece construction
- Integrated floating spring made of beryllium copper or copper nickel silicon



## AVAILABLE CONFIGURATIONS

|                                    |                                    |
|------------------------------------|------------------------------------|
| Terminal Type                      | Box & Blade                        |
| Terminal Construction              | Two-piece                          |
| Locking Mechanism                  | Tangless / Lanceless               |
| Terminal Cavity                    | APEX <sup>®</sup>                  |
| Blade Size (mm)                    | 1.5                                |
| Wire Gage Range (AWG)              | 22 - 16                            |
| Wire Gage Range (mm <sup>2</sup> ) | 0.35 - 1.5                         |
| Genders                            | Female, Male                       |
| Sealing Options                    | Unsealed, Mat Sealed, Cable Sealed |
| Plating Options                    | Sn, Au                             |



## CHARACTERISTICS

|                        |          |
|------------------------|----------|
| Contact Resistance     | < 0.5 mΩ |
| Contact Mating Force   | < 5 N    |
| Contact Unmating Force | < 1 N    |



MAX  
TEMP



MAX  
VIBRATION



MAX  
CURRENT



| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm²) | Part number | Other available platings | Other available configurations |
|--------------|--------|---------|-----------------------|-----------------------|-------------|--------------------------|--------------------------------|
| Unsealed     | F      | Sn      | 24 - 20               | 0.35 - 0.5            | 15521509    | Au                       | -                              |
| Unsealed     | F      | Sn      | 20 - 18               | 0.75 - 1.25           | 13679770    | Au                       | -                              |
| Unsealed     | F      | Sn      | 16 - 14               | 1.5 - 2.5             | 15521507    | -                        | -                              |
| Unsealed     | M      | Au      | 22 - 20               | 0.35 - 0.5            | 15520991    | -                        | Rewind A, C                    |
| Unsealed     | M      | Sn      | 20 - 18               | 0.75 - 1.25           | 15438399    | -                        | -                              |
| Cable Sealed | F      | Au      | 24 - 20               | 0.35 - 0.5            | 33337935    | -                        | -                              |

Please, contact an Aptiv representative for the full part number list.

## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm²) | Color  | Restraint Ring                                                                     | Part Number |
|------------|----------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                            |        |  |             |
| Cable Seal | 0.35 - 0.5                 | Blue   | No                                                                                 | 15344938    |
|            |                            |        |  |             |
| Cable Seal | 0.35 - 0.75                | Yellow | Yes                                                                                | 10736278    |



# APEX<sup>®</sup> 150 TERMINALS

USCAR



APEX<sup>®</sup> 150 Female & Male Terminals

## BENEFITS

- Heavy-duty performance
- Highest current rating

## FEATURES

- Two-piece construction
- Integrated floating spring made of beryllium copper or copper nickel silicon
- Meets or exceeds USCAR performance standards



## AVAILABLE CONFIGURATIONS

|                                    |                      |
|------------------------------------|----------------------|
| Terminal Type                      | Box & Blade          |
| Terminal Construction              | Two-piece            |
| Locking Mechanism                  | Tangless / Lanceless |
| Terminal Cavity                    | APEX <sup>®</sup>    |
| Blade Size (mm)                    | 1.5                  |
| Wire Gage Range (AWG)              | 22 - 16              |
| Wire Gage Range (mm <sup>2</sup> ) | 0.35 - 1.0           |
| Genders                            | Female, Male         |
| Sealing Options                    | Unsealed             |
| Plating Options                    | Sn, Au               |



## CHARACTERISTICS

|                        |          |
|------------------------|----------|
| Contact Resistance     | < 0.5 mΩ |
| Contact Mating Force   | < 3.5 N  |
| Contact Unmating Force | < 1 N    |



MAX  
TEMP



MAX  
VIBRATION



MAX  
CURRENT



| Sealing  | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings | Other available configurations |
|----------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|--------------------------------|
| Unsealed | F      | Sn      | 22 - 20               | 0.35 - 0.5                         | 13624983    | Au                       | Rewind A, C                    |
| Unsealed | F      | Sn      | 18 - 16               | 0.75 - 1.25                        | 13613157    | Au                       | Rewind A, C                    |
| Unsealed | M      | Sn      | 22 - 20               | 0.35 - 0.5                         | 13624759    | Au                       | Rewind A                       |
| Unsealed | M      | Sn      | 18 - 16               | 0.75 - 1.25                        | 13630404    | Au                       | Rewind A, C                    |

Please, contact an Aptiv representative for the full part number list.



COMPATIBLE WITH



APEX® 150 Sealed Series Housings

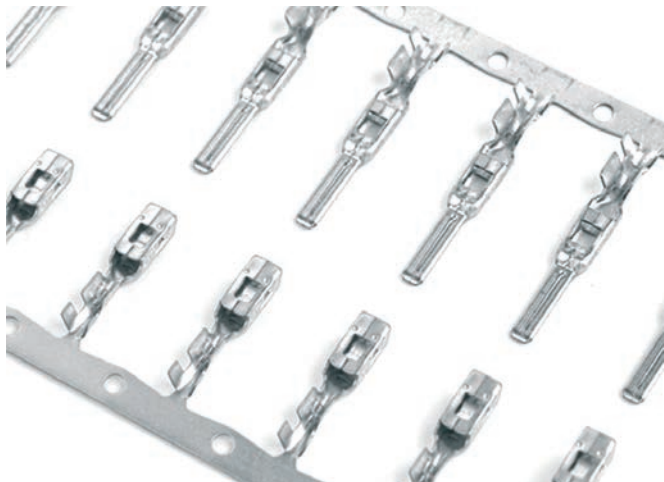


APEX® Mixed Series Housings



APEX® ErgoMate™ Series Housings

# APEX<sup>®</sup> 2.8 TERMINALS



APEX<sup>®</sup> 2.8 Female & Male Terminals

## BENEFITS

- Heavy-duty performance
- Highest current rating

## FEATURES

- Two-piece construction
- Integrated floating spring made of beryllium copper or copper nickel silicon
- Low contact mating force



## AVAILABLE CONFIGURATIONS

|                                    |                                    |
|------------------------------------|------------------------------------|
| Terminal Type                      | Box & Blade                        |
| Terminal Construction              | Two-piece                          |
| Locking Mechanism                  | Tangless / Lanceless               |
| Terminal Cavity                    | APEX <sup>®</sup>                  |
| Blade Size (mm)                    | 2.8                                |
| Wire Gage Range (AWG)              | 22 - 10                            |
| Wire Gage Range (mm <sup>2</sup> ) | 0.35 - 6.0                         |
| Genders                            | Female, Male                       |
| Sealing Options                    | Unsealed, Mat Sealed, Cable Sealed |
| Plating Options                    | Sn, Ag, Au                         |



## CHARACTERISTICS

|                        |        |
|------------------------|--------|
| Contact Resistance     | < 2 mΩ |
| Contact Mating Force   | < 5 N  |
| Contact unmating Force | < 2 N  |



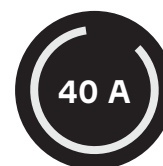
MAX  
TEMP



MAX  
VIBRATION



MAX  
CURRENT



| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm²) | Part number | Other available platings | Other available configurations |
|--------------|--------|---------|-----------------------|-----------------------|-------------|--------------------------|--------------------------------|
| Unsealed     | F      | Sn      | 12 - 10               | 4.0 - 6.0             | 10762802    | Au                       | Greased/Ungreased, Rewind A, C |
| Unsealed     | F      | Sn      | 12                    | 3.0                   | 15422738    | Au                       | Greased/Ungreased, Rewind A, C |
| Unsealed     | F      | Sn      | 16 - 14               | 2.0                   | 10762803    | Au                       | Greased/Ungreased, Rewind A, C |
| Unsealed     | F      | Sn      | 20 - 18               | 0.5 - 1.0             | 10757690    | Au                       | Greased/Ungreased, Rewind A, C |
| Unsealed     | F      | Sn      | 22                    | 0.35                  | 10757691    | -                        | Greased/Ungreased, Rewind A, C |
| Unsealed     | M      | Sn      | 12 - 10               | 4.0 - 6.0             | 10762774    | Au                       | Rewind A, C                    |
| Unsealed     | M      | Sn      | 16 - 14               | 1.5 - 2.5             | 10757692    | Au                       | Rewind A, C                    |
| Unsealed     | M      | Sn      | 20 - 18               | 0.5 - 1.0             | 10762775    | Au                       | Rewind A, C                    |
| Unsealed     | M      | Sn      | 22                    | 0.35                  | 10762776    | Au                       | Rewind A, C                    |
| Cable Sealed | F      | Sn      | 12                    | 3.0                   | 10810733    | -                        | Greased/Ungreased, Rewind A, C |
| Cable Sealed | F      | Sn      | 16 - 14               | 1.5 - 2.5             | 13627267    | Ag, Au                   | Greased/Ungreased, Rewind A, C |
| Cable Sealed | F      | Sn      | 20 - 18               | 0.5 - 1.0             | 10810375    | Ag, Au                   | Greased/Ungreased, Rewind A, C |

## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm²) | Color | Restraint Ring                                                                     | Part Number |
|------------|----------------------------|-------|------------------------------------------------------------------------------------|-------------|
|            |                            |       |  |             |
| Cable Seal | 0.35 - 1.0                 | Pink  | Yes                                                                                | 35296484    |
| Cable Seal | 1.0 - 2.0                  | Black | Yes                                                                                | 15518641    |
| Cable Seal | 2.5 - 4.0                  | Brown | Yes                                                                                | 15458498    |

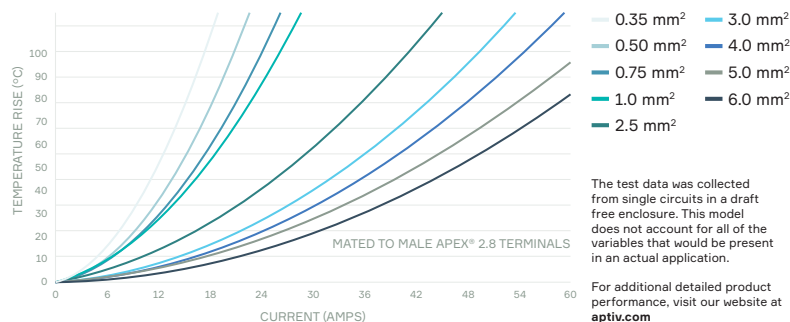
Please, contact an Aptiv representative for the full part number list.

## TEMP RISE CURVE

### APEX® 2.8 FEMALE TERMINAL

Aptiv taxi: 15324842  
 Cable range: 0.35 - 6.0 mm²  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: Male terminal

\* For reference only



## COMPATIBLE WITH



# APEX<sup>®</sup> 6.35 TERMINALS



APEX<sup>®</sup> 6.35 Female & Male Terminals

## BENEFITS

- Heavy-duty performance
- Highest current rating

## FEATURES

- Two-piece construction
- Integrated floating spring made of beryllium copper or copper nickel silicon



## AVAILABLE CONFIGURATIONS

|                                    |                        |
|------------------------------------|------------------------|
| Terminal Type                      | Box & Blade            |
| Terminal Construction              | Two-piece              |
| Locking Mechanism                  | Tangless / Lanceless   |
| Terminal Cavity                    | APEX <sup>®</sup>      |
| Blade Size (mm)                    | 6.35                   |
| Wire Gage Range (AWG)              | 20 - 8                 |
| Wire Gage Range (mm <sup>2</sup> ) | 0.5 - 8.0              |
| Genders                            | Female, Male           |
| Sealing Options                    | Unsealed, Cable Sealed |
| Plating Options                    | Sn, Sn/Ag, Ag          |



## CHARACTERISTICS

|                        |        |
|------------------------|--------|
| Contact Resistance     | < 2 mΩ |
| Contact Mating Force   | < 10 N |
| Contact Unmating Force | < 5 N  |



MAX  
TEMP



MAX  
VIBRATION



MAX  
CURRENT



## APPLICATIONS

High current/high power unique applications

| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings | Other available configurations  |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|---------------------------------|
| Unsealed     | F      | Sn      | 8                     | 8.0                                | 35213380    | -                        | Greased/Ungreased ReRewind A, C |
| Unsealed     | F      | Sn      | 10                    | 4.0 - 6.0                          | 13843152    | -                        | Greased/Ungreased ReRewind A, C |
| Unsealed     | F      | Sn      | 14 - 12               | 2.0 - 3.0                          | 13600463    | -                        | Greased/Ungreased ReRewind A, C |
| Unsealed     | F      | Sn      | 18 - 16               | 0.75 - 1.5                         | 13965582    | -                        | Greased/Ungreased ReRewind A, C |
| Unsealed     | F      | Sn      | 20 - 18               | 0.5 - 0.75                         | 13872174    | -                        | Greased/Ungreased ReRewind A, C |
| Unsealed     | M      | Sn      | 10                    | 4.0 - 6.0                          | 33386358    | -                        | -                               |
| Cable Sealed | F      | Sn      | 10                    | 4.0 - 6.0                          | 10863886    | Ag                       | Greased/Ungreased, Rewind A, C  |
| Cable Sealed | F      | Sn      | 14 - 12               | 2.0 - 3.0                          | 13658862    | Ag                       | Greased/Ungreased ReRewind A, C |
| Cable Sealed | F      | Sn      | 18 - 16               | 0.75 - 1.5                         | 13673119    | Ag                       | Greased/Ungreased ReRewind A, C |

## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color   | Restraint Ring                                                                       | Part Number |
|------------|-----------------------------------------|---------|--------------------------------------------------------------------------------------|-------------|
|            |                                         |         |    |             |
| Cable Seal | 0.75 - 1.25                             | Natural | No                                                                                   | 15324997    |
| Cable Seal | 1.25 - 2.0                              | Red     | No                                                                                   | 15324995    |
| Cable Seal | 2.5 - 4.0                               | Gray    | No                                                                                   | 15324994    |
| Cable Seal | 4.0 - 6.0                               | Blue    | No                                                                                   | 15324996    |
|            |                                         |         |  |             |
| Cable Seal | 2.0 - 3.0                               | Black   | Yes                                                                                  | 35308322    |

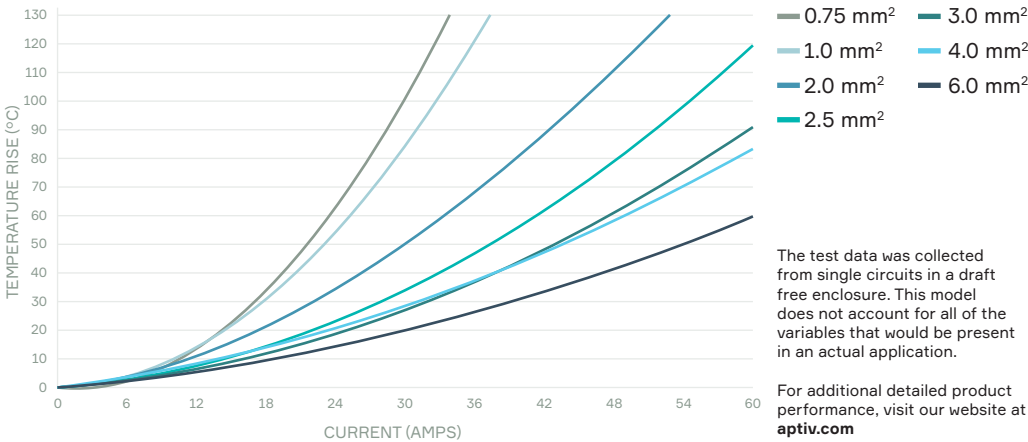
Please, contact an Aptiv representative for the full part number list.

## TEMP RISE CURVE

### APEX® 6.3 FEMALE TERMINAL

Aptiv taxi: 13707625  
 Cable range: 0.75 - 6.0 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn halt  
 Test method: Single circuit in free air\*  
 Mated to: Male terminal

\* For reference only



# APEX<sup>®</sup> 9.5 TERMINALS



APEX<sup>®</sup> 9.5 Female & Male Terminals

## BENEFITS

- Heavy-duty performance
- Highest current rating
- Suitable for high power and high voltage applications

## FEATURES

- Two-piece construction
- Integrated floating spring made of stainless steel
- Large cable size capability



## AVAILABLE CONFIGURATIONS

|                                    |                        |
|------------------------------------|------------------------|
| Terminal Type                      | Box & Blade            |
| Terminal Construction              | Two-piece              |
| Locking Mechanism                  | Tangless / Lanceless   |
| Terminal Cavity                    | APEX <sup>®</sup>      |
| Crimp Validated to                 | RSA/PSA                |
| Blade Size (mm)                    | 9.5                    |
| Wire Gage Range (AWG)              | 7 - 3                  |
| Wire Gage Range (mm <sup>2</sup> ) | 10 - 16                |
| Genders                            | Female, Male           |
| Sealing Options                    | Unsealed, Cable Sealed |
| Plating Options                    | Sn                     |
| Mating Tab Dimension (mm)          | 9.5 x 1.2              |



## CHARACTERISTICS

|                          |                              |
|--------------------------|------------------------------|
| Contact Resistance       | < 0.3 mΩ                     |
| Contact Mating Force     | < 30 N                       |
| Contact unmating Force   | < 10 N                       |
| Mating Cycles Tin/Silver | 10                           |
| Cavity Pullout Force     | > 150 N                      |
| Center Line Spacing (mm) | 18 (sealed)<br>14 (unsealed) |



MAX  
TEMP



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



16 mm<sup>2</sup>

| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|
| Unsealed     | F      | Sn      | 5 - 3                 | 16 - 25                            | 13862251    |
| Cable Sealed | F      | Sn      | 7 - 5                 | 10 - 16                            | 33514387    |
| Cable Sealed | M      | Sn      | 7 - 5                 | 10 - 16                            | 33514386    |



## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                                         |        |  |             |
| Cable Seal | 6                                       | Green  | Yes                                                                                | 35239048    |
| Cable Seal | 10                                      | Blue   | Yes                                                                                | 33503294    |
| Cable Seal | 16                                      | Yellow | Yes                                                                                | 33503295    |

Please, contact an Aptiv representative for the full part number list.

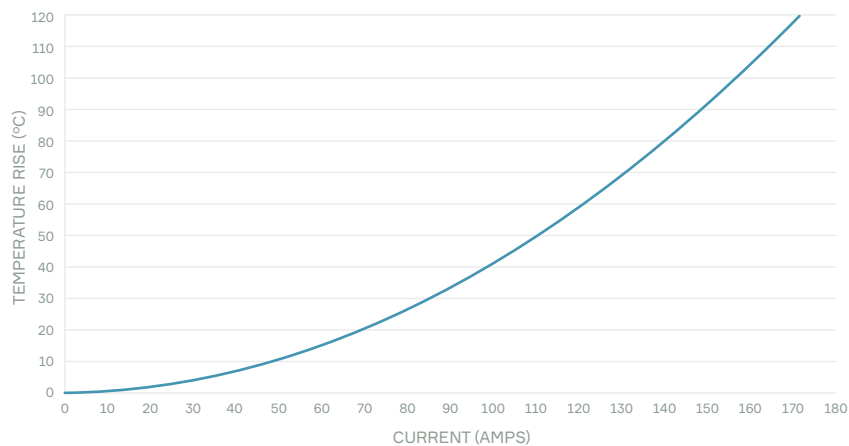


## TEMP RISE CURVE

### APEX® 9.5 FEMALE TERMINAL

Cable range: 10.0 - 16.0 mm<sup>2</sup>  
Crimp method: Standard  
Contact plating: Sn  
Test method: Single circuit in free air\*  
Mated to: Male terminal

\* For reference only

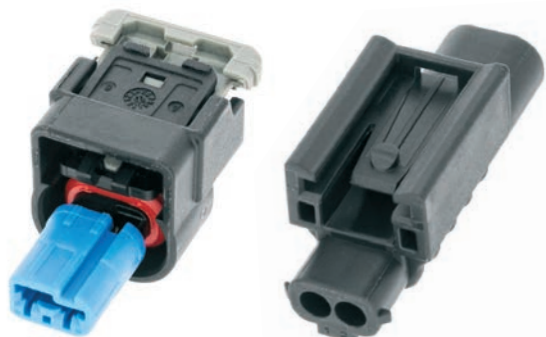


— 16.0 mm<sup>2</sup>

The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](http://aptiv.com)

# APEX<sup>®</sup> 1.2 SensoMate<sup>™</sup> SERIES



APEX<sup>®</sup> 1.2 SensoMate<sup>™</sup>  
2W Female & Male



APEX<sup>®</sup> 1.2 SensoMate<sup>™</sup>  
4W Female

## BENEFITS

- Heavy-duty performance for engine vibration and temperature
- Highest current rating of APEX two-piece performance technology
- Ergonomic design including Connector Position Assurance (CPA)

## FEATURES

- Compatible with VDA (AK) 1.2 and USCAR 120 device interfaces (1.2 mm male blade)
- Compliant with Hyundai ES 91500-00/02
- Compliant with USCAR design guidelines and performance standards
- Compliant to Renault-Nissan-Mitsubishi RND5-B-00029 performance standards
- Terminal Position Assurance (TPA) based on Primary Lock Reinforcement (PLR) to detect partially installed terminals



## AVAILABLE CONFIGURATIONS

|                             |                   |
|-----------------------------|-------------------|
| Cavity Count (ways)         | 2, 3, 4, 5, 6     |
| Cavity Configurations (mm)  | 1.2               |
| Blade Size (mm)             | 1.2               |
| Genders                     | Female, Male      |
| Sealing Type                | Cable Sealed      |
| Centerline Spacing (mm)     | 4.0               |
| TPA                         | PLR               |
| CPA                         | Optional          |
| High Temperature T5 (175°C) | Version available |

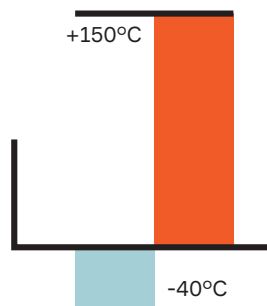


## APPLICATIONS

On-engine sensors and actuators



## TEMPERATURE



## VIBRATION



## SEALING CLASS



| Cavity count | Gender | Dimensions W x H x D (mm) | Part number | Index | CPA | Color | Generation        | Shroud Length | Other indexes offered |
|--------------|--------|---------------------------|-------------|-------|-----|-------|-------------------|---------------|-----------------------|
| 2            | F      | 16.4 x 17.6 x 32.0        | 13806231    | A     | No  | Black | One               | Short (half)  | B, C                  |
| 2            | F      | 17 x 16.45 x 28.3         | 33401217    | A     | No  | Black | Two               | Short (half)  | B, C, D               |
| 2            | F      | 17.4 x 16.45 x 28.3       | 33401221    | A     | Yes | Black | Two               | Short (half)  | B, C, D               |
| 2            | F      | 17 x 16.45 x 28.3         | 33384128    | A     | No  | Black | Two. Clip-Type    | Long (full)   | B, C, D               |
| 2            | F      | 17.4 x 16.45 x 28.3       | 35050101    | A     | Yes | Black | Two. Clip-Type    | Long (full)   | B, C, D               |
| 2            | F      | 17 x 16.45 x 28.3         | 33318607    | A     | No  | Black | Two               | Long (full)   | B, C, D               |
| 2            | F      | 17.4 x 16.45 x 28.3       | 33318611    | A     | Yes | Black | Two               | Long (full)   | B, C, D               |
| 2            | F      | 17 x 16.45 x 28.3         | 35259417    | A     | No  | Black | Two. High Temp T5 | Long (full)   | B, C                  |
| 2            | F      | 17.4 x 16.45 x 28.3       | 35259421    | A     | Yes | Black | Two. High Temp T5 | Long (full)   | B, C                  |
| 3            | F      | 19.3 x 17.6 x 31.0        | 13578335    | A     | No  | Black | One               | Short (half)  | B, C, D               |
| 3            | F      | 19.3 x 16.45 x 28.3       | 33242572    | A     | No  | Black | Two               | Short (half)  | B, C, D               |
| 3            | F      | 19.3 x 16.45 x 28.3       | 33242576    | A     | Yes | Black | Two               | Short (half)  | B, C, D               |
| 3            | F      | 19.3 x 16.45 x 28.3       | 33317676    | A     | No  | Black | Two               | Long (full)   | B, C, D               |
| 3            | F      | 19.3 x 16.45 x 28.3       | 33317681    | A     | Yes | Black | Two               | Long (full)   | B, C, D               |
| 4            | F      | 24.5 x 17.6 x 32.1        | 13820427    | A     | No  | Black | One               | Short (half)  | B, C, D               |
| 4            | F      | 24.6 x 17.7 x 28.3        | 33218537    | A     | No  | Black | One               | Short (half)  | B, C, D               |
| 4            | F      | 24.6 x 17.6 x 28.3        | 35172690    | A     | No  | Black | Two               | Long (full)   | B, C, D               |
| 4            | F      | 24.6 x 17.6 x 28.3        | 35172708    | A     | Yes | Black | Two               | Long (full)   | B, C, D               |
| 5            | F      | 28.6 x 17.6 x 28.7        | 35023342    | A     | No  | Black | Two               | Short (half)  | B, C, D               |
| 5            | F      | 28.6 x 17.6 x 28.7        | 35032599    | A     | Yes | Black | Two               | Short (half)  | B, C, D               |
| 5            | F      | 28.6 x 17.6 x 28.7        | 33241268    | A     | No  | Black | Two               | Long (full)   | B, C, D               |
| 5            | F      | 28.6 x 17.6 x 28.7        | 33241269    | A     | Yes | Black | Two               | Long (full)   | B, C, D               |
| 5            | F      | 28.6 x 17.6 x 28.7        | 35288140    | A     | No  | Black | Two*              | Short (half)  | B, C, D               |
| 5            | F      | 28.6 x 17.6 x 28.7        | 35288144    | A     | Yes | Black | Two*              | Short (half)  | B, C, D               |
| 6            | F      | 32.6 x 17.65 x 28.45      | 33355813    | A     | No  | Black | Two               | Long (full)   | B, C, D               |
| 6            | F      | 32.6 x 17.65 x 28.45      | 33356199    | A     | Yes | Black | Two               | Long (full)   | B, C, D               |
| 2            | M      | 12.6 x 13.45 x 43.4       | 33219402    | A     | x   | Black | One               | N/A           | B, C, D               |
| 3            | M      | 15.2 x 13.45 x 43.4       | 33355759    | A     | x   | Black | One               | N/A           | B, C, D               |
| 4            | M      | 21.9 x 18.7 x 43.4        | 35078036    | A     | x   | Black | One               | N/A           | B, C, D               |

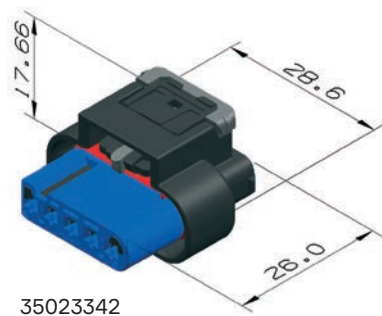
\* 180° polarization oriented

| Type        | Applicable Wire Size (mm²) | Color | Restraint Ring | Part Number |
|-------------|----------------------------|-------|----------------|-------------|
| Cavity Plug | N/A                        | White | No             | 12198198    |
|             |                            |       |                |             |
| Cable Seal  | 0.35 - 0.5                 | Gray  | Yes            | 33318278    |
|             |                            |       |                |             |
|             |                            |       |                |             |
| Cable Seal  | 0.5 - 0.85                 | Gray  | Yes            | 33318279    |
| Cable Seal  | 1.0 -1.5                   | Black | Yes            | 33318275    |

\* 180° polarization oriented



## DIMENSION MEASUREMENT SAMPLE



## COMPATIBLE WITH



# APEX<sup>®</sup> 150 SEALED SERIES



APEX<sup>®</sup> 150 Sealed  
10W Female & Male

## BENEFITS

- Heavy-duty performance
- Highest current rating
- Ergonomic design

## FEATURES

- Waterproof application with interfacial and mat seal
- Compliant with USCAR design guidelines and performance standards
- USCAR footprint compatible
- Primary Lock Reinforcement (PLR)
- Mechanical polarization

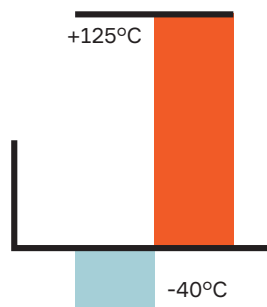


## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 10, 16       |
| Cavity Configurations (mm) | 1.5          |
| Genders                    | Female, Male |
| Sealing Type               | Mat Sealed   |
| Centerline Spacing (mm)    | 3.5          |
| CPA                        | Optional     |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Sealed inline and device applications

See back page for representative part numbers and packaging dimensions.



## ENVIRONMENTAL PROTECTION

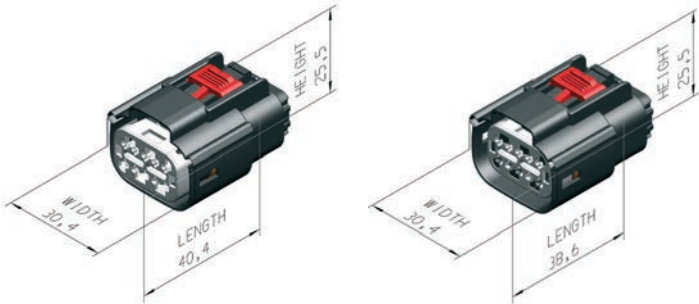
IP69K

| Cavity count | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Index | Color | Other indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 10           | 1.5             | F      | 28.7 x 24.7 x 38.6        | 13737245    | A     | Black | B, C, D               |
| 10           | 1.5             | M      | 25.9 x 23.3 x 53.0        | 13763996    | A     | Black | B, C, D               |
| 16           | 1.5             | F      | 39.2 x 24.7 x 38.6        | 13625159    | A     | Black | B, C, D               |
| 16           | 1.5             | M      | 36.4 x 23.3 x 53.0        | 13625160    | A     | Black | B, C, D               |

Please, contact an Aptiv representative for the full part number list.



DIMENSION MEASUREMENT SAMPLE

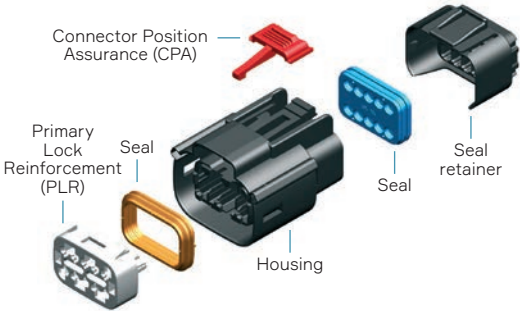


APEX® 150 Sealed  
10W Female pre-assembly

APEX® 150 Sealed  
10W Female assembly



EXPLODED VIEW



APEX® 150 Sealed  
10W Female



COMPATIBLE WITH



APEX® 150 Series Terminals

# APEX<sup>®</sup> 2.8 SensoMate<sup>™</sup> SERIES



APEX<sup>®</sup> 2.8 SensoMate<sup>™</sup>  
4W Female

## BENEFITS

- Heavy-duty performance
- Highest current rating
- Ergonomic design

## FEATURES

- Compliant with USCAR design guidelines and performance standards
- Industry standard footprint
- Superior single-piece housing construction
- Primary Lock Reinforcement (PLR) to detect partially installed terminals

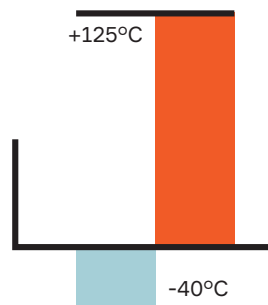


## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 2, 3, 4      |
| Cavity Configurations (mm) | 2.8          |
| Genders                    | Female       |
| Sealing Type               | Cable Sealed |
| Centerline Spacing (mm)    | 5.0          |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

On-engine sensors



## ENVIRONMENTAL PROTECTION

IP69K

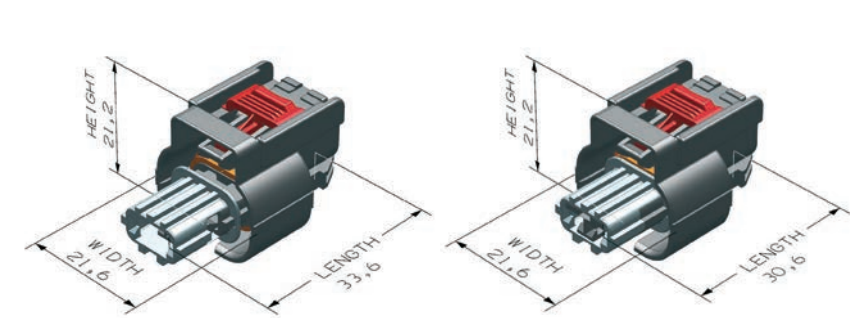
| Cavity count | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Index | Color | Other indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 2            | 2.8             | F      | 21.6 x 21.2 x 31.0        | 13821046    | A     | Black | B                     |
| 3            | 2.8             | F      | 26.6 x 21.2 x 31.0        | 13791661    | A     | Black | B                     |
| 4            | 2.8             | F      | 31.6 x 23.2 x 31.0        | 33513154    | A     | Black | B                     |

Please, contact an Aptiv representative for the full part number list.

### COMPATIBLE SEALS

| Type        | Applicable Wire Size (mm²) | Color | Restraint Ring | Part Number |
|-------------|----------------------------|-------|----------------|-------------|
| Cable Seal  | 0.35 - 1.0                 | Pink  | Yes            | 35296484    |
|             |                            |       |                |             |
|             | 1.0 - 2.0                  | Black | Yes            | 15518641    |
|             |                            |       |                |             |
| Cable Seal  | 2.5 - 4.0                  | Brown | Yes            | 15458498    |
| Cavity Plug | N/A                        | Blue  | Yes            | 35478080    |
| Cavity Plug | N/A                        | White | No             | 15305170    |
|             |                            |       |                |             |

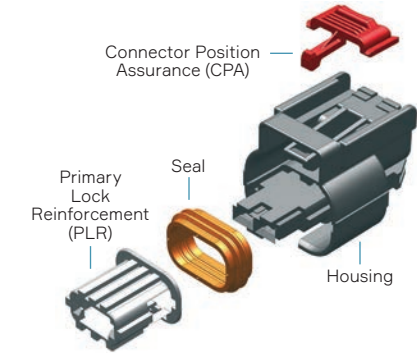
### DIMENSION MEASUREMENT SAMPLE



APEX® 2.8 SensoMate™  
2W Female pre-assembly

APEX® 2.8 SensoMate™  
2W Female assembly

### EXPLODED VIEW



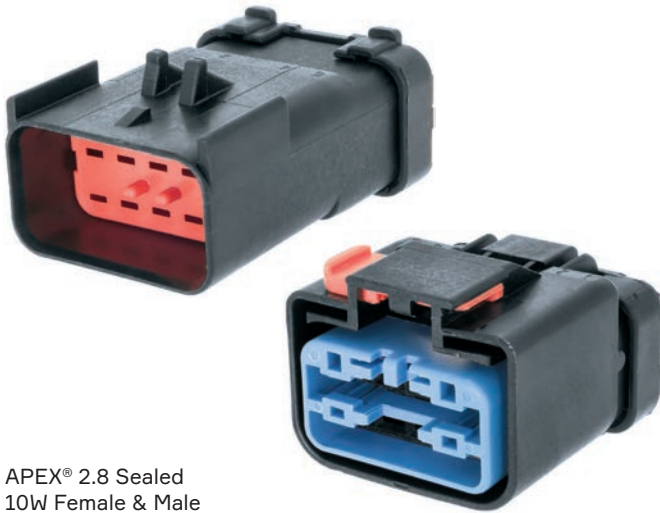
APEX® 2.8 SensoMate™  
2W Female

### COMPATIBLE WITH



APEX® 2.8 Series Terminals

# APEX<sup>®</sup> 2.8 SEALED SERIES



APEX<sup>®</sup> 2.8 Sealed  
10W Female & Male

## BENEFITS

- Heavy-duty performance
- Highest current rating
- Ergonomic design

## FEATURES

- Most compact 2.8 mm system in the industry
- Fully protected interface seal
- Meets or exceeds USCAR performance standards and GMW3191
- Compliant with USCAR design guidelines and performance standards
- 0.75 mm<sup>2</sup> (20 AWG) to 4 mm<sup>2</sup> (10 AWG)
- Primary Lock Reinforcement (PLR)
- Mechanical polarization

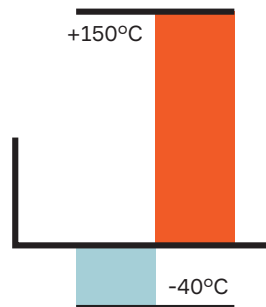


## AVAILABLE CONFIGURATIONS

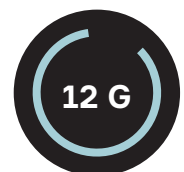
|                            |                       |
|----------------------------|-----------------------|
| Cavity Count (ways)        | 2, 3, 4, 5, 6, 10, 14 |
| Cavity Configurations (mm) | 2.8                   |
| Genders                    | Female, Male          |
| Sealing Type               | Mat Sealed            |
| Centerline Spacing (mm)    | 5.25                  |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Sealed inline and device applications



## ENVIRONMENTAL PROTECTION

IP68

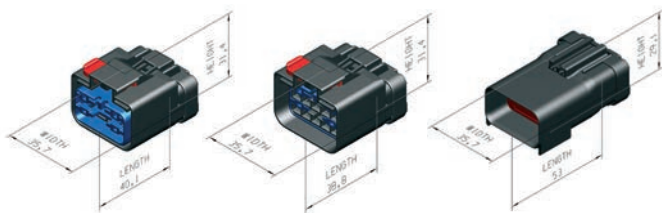
| Cavity count | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Index | Color | Other indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 2            | 2.8             | F      | 24.8 x 25.7 x 40.1        | 10757672    | A     | Black | B, C, D               |
| 2            | 2.8             | M      | 21.9 x 23.4 x 53.0        | 15488574    | A     | Black | B, C, D               |
| 3            | 2.8             | F      | 28.2 x 21.9 x 40.1        | 10757671    | A     | Black | B, C, D               |
| 3            | 2.8             | M      | 28.2 x 22.5 x 53.0        | 15394689    | A     | Black | B, C, D               |
| 4            | 2.8             | F      | 32.6 x 22.2 x 40.1        | 15425692    | A     | Black | B, C, D               |
| 4            | 2.8             | M      | 31.1 x 22.5 x 53.0        | 15489820    | A     | Black | B, C, D               |
| 5            | 2.8             | F      | 36.0 x 23.4 x 41.3        | 33513170    | A     | Black | B, C, D               |
| 6            | 2.8             | F      | 24.8 x 25.3 x 37.7        | 35063643    | A     | Black | B, C, D               |
| 6            | 2.8             | M      | 24.4 x 26.3 x 53.0        | 15430633    | A     | Black | B, C, D               |
| 10           | 2.8             | F      | 35.3 x 31.4 x 40.1        | 15316895    | A     | Black | B, C, D               |
| 10           | 2.8             | M      | 32.4 x 29.1 x 53.0        | 15425612    | A     | Black | B, C, D               |
| 14           | 2.8             | F      | 45.8 x 30.8 x 37.8        | 10763414    | A     | Black | B, C, D               |
| 14           | 2.8             | M      | 46.2 x 29.2 x 53.1        | 10757674    | A     | Black | B, C, D               |

Please, contact an Aptiv representative for the full part number list.

## COMPATIBLE SEALS

| Type        | Applicable Wire Size (mm²) | Color | Restraint Ring                                                                       | Part Number |
|-------------|----------------------------|-------|--------------------------------------------------------------------------------------|-------------|
|             |                            |       |    |             |
| Cable Seal  | 0.35 - 1.0                 | Pink  | Yes                                                                                  | 35296484    |
| Cable Seal  | 1.0 - 2.0                  | Black | Yes                                                                                  | 15518641    |
| Cable Seal  | 2.5 - 4.0                  | Brown | Yes                                                                                  | 15458498    |
| Cavity Plug | N/A                        | Blue  | Yes                                                                                  | 35478080    |
|             |                            |       |  |             |
| Cavity Plug | N/A                        | White | No                                                                                   | 15305170    |

## DIMENSION MEASUREMENT SAMPLE

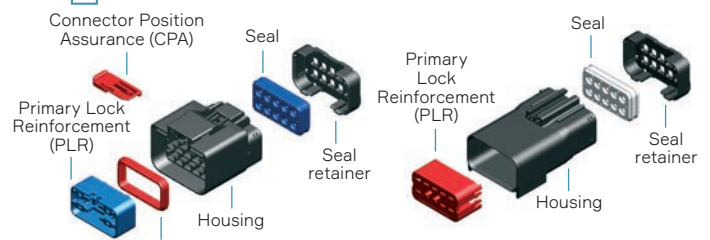


APEX® 2.8 Sealed  
10W Female

APEX® 2.8 Sealed  
10W Female

APEX® 2.8 Sealed  
10W Male

## EXPLODED VIEW



APEX® 2.8 Sealed  
10W Female

APEX® 2.8 Sealed  
10W Male

## COMPATIBLE WITH



Part numbers, specifications, dimensions and performance data in this document are for general references only and are subject to change without notice. To verify product information, please contact an Aptiv representative.

# APEX<sup>®</sup> 2.8 UNSEALED SERIES



APEX<sup>®</sup> 2.8 Unsealed  
10W Female & Male

## BENEFITS

- Heavy-duty performance
- Highest current rating
- Ergonomic design

## FEATURES

- Meets or exceeds USCAR performance standards and GMW3191
- 0.35 mm<sup>2</sup> (22 AWG) to 5 mm<sup>2</sup> (10 AWG)
- Fully assembled connector for ease of use
- Primary Lock Reinforcement (PLR)
- Mechanical polarization

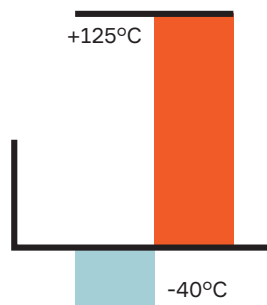


## AVAILABLE CONFIGURATIONS

|                            |                       |
|----------------------------|-----------------------|
| Cavity Count (ways)        | 2, 3, 4, 5, 6, 10, 14 |
| Cavity Configurations (mm) | 2.8                   |
| Genders                    | Female, Male          |
| Centerline Spacing (mm)    | 5.25                  |
| CPA                        | Optional              |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Unsealed inline and device applications



## ENVIRONMENTAL PROTECTION

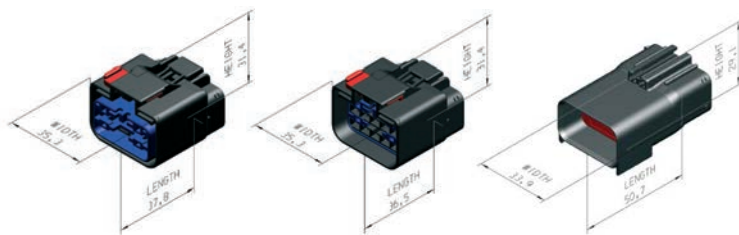


| Cavity count | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Index | Color | Other indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 2            | 2.8             | F      | 24.8 x 25.7 x 40.1        | 13869306    | A     | Black | B, C, D               |
| 2            | 2.8             | M      | 21.9 x 23.4 x 50.7        | 33500082    | A     | Black | B, C, D               |
| 3            | 2.8             | F      | 28.2 x 21.9 x 37.8        | 13576040    | A     | Black | B, C, D               |
| 3            | 2.8             | M      | 28.2 x 22.5 x 50.7        | 33500093    | A     | Black | B, C, D               |
| 4            | 2.8             | F      | 32.6 x 22.2 x 37.8        | 33517234    | A     | Black | B, C, D               |
| 4            | 2.8             | M      | 31.1 x 22.5 x 50.7        | 33500099    | A     | Black | B, C, D               |
| 5            | 2.8             | F      | 36.0 x 23.4 x 39.0        | 33513166    | A     | Black | B, C, D               |
| 6            | 2.8             | F      | 24.8 x 25.3 x 37.8        | 15441804    | A     | Black | B, C, D               |
| 6            | 2.8             | M      | 24.4 x 26.3 x 50.7        | 33500104    | A     | Black | B, C, D               |
| 10           | 2.8             | F      | 35.3 x 31.4 x 37.8        | 15492288    | A     | Black | B, C, D               |
| 10           | 2.8             | M      | 32.4 x 29.1 x 50.7        | 33500112    | A     | Black | B, C, D               |
| 14           | 2.8             | F      | 45.8 x 30.8 x 37.8        | 13582973    | A     | Black | B, C, D               |
| 14           | 2.8             | M      | 46.2 x 29.2 x 50.7        | 13581869    | A     | Black | B, C, D               |

Please, contact an Aptiv representative for the full part number list.



## DIMENSION MEASUREMENT SAMPLE



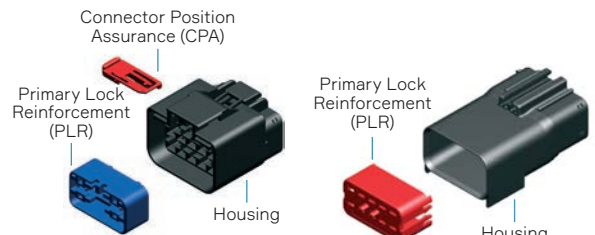
APEX® 2.8 Unsealed  
10W Female  
pre-assembly

APEX® 2.8 Unsealed  
10W Female  
assembly

APEX® 2.8 Unsealed  
10W Male  
assembly



## EXPLODED VIEW



APEX® 2.8 Unsealed  
10W Female

APEX® 2.8 Unsealed  
10W Male



## COMPATIBLE WITH



APEX® 2.8 Series Terminals

# APEX<sup>®</sup> MIXED SERIES



APEX<sup>®</sup> Mixed  
14W Female & Male

## BENEFITS

- Heavy-duty performance
- Highest current rating
- Ergonomic design

## FEATURES

- APEX 150 and APEX 2.8 terminals for power and signal delivery
- Compliant with USCAR design guidelines and performance standards
- Primary Lock Reinforcement (PLR)
- Shorting Bar version available for safety circuit protection (where electro-static discharge must be prevented)

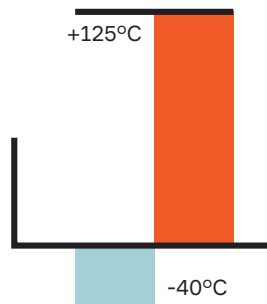


## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 14           |
| Cavity Configurations (mm) | 1.5, 2.8     |
| Genders                    | Female, Male |
| Sealing Type               | Mat Sealed   |
| CPA                        | Optional     |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Sealed inline applications



## ENVIRONMENTAL PROTECTION

IP69K

| Cavity count | Blade size (mm)    | Gender | Dimensions W x H x D (mm) | Part number | Index | Color | Other indexes offered |
|--------------|--------------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 14           | 1.5 (10) + 2.8 (4) | F      | 38.3 x 25.1 x 37.9        | 13878050    | A     | Black | B, C, D, E, F         |
| 14           | 1.5 (10) + 2.8 (4) | M      | 36.2 x 23.3 x 61.5        | 13694022    | A     | Black | B, C, D, E, F         |

Please, contact an Aptiv representative for the full part number list.



## DIMENSION MEASUREMENT SAMPLE



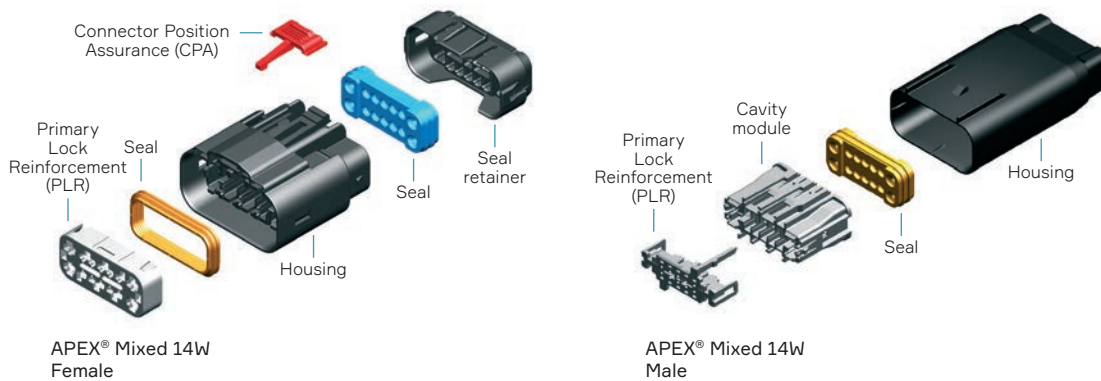
APEX® Mixed 14W  
Female



APEX® Mixed 14W  
Male



## EXPLODED VIEW



## COMPATIBLE WITH



# APEX<sup>®</sup> ErgoMate<sup>™</sup> SERIES



APEX<sup>®</sup> ErgoMate<sup>™</sup>  
24W Female & Male

## BENEFITS

- Heavy-duty performance
- Highest current rating
- Ergonomic design

## FEATURES

- High reliability one-handed mating
- Simplified engagement system reduces the possibility of mis-mating the connection system
- Unique geared cam and slider system is fully self-contained, provides a 3:1 mechanical advantage
- A lower-profile ergonomically friendly alternative to traditional lever assist
- Low connector mating force at ~55N
- Primary Lock Reinforcement (PLR)

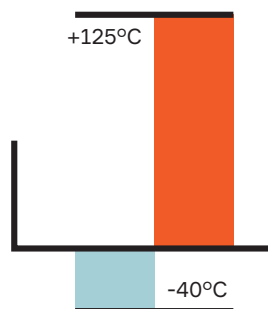


## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 24           |
| Cavity Configurations (mm) | 1.5, 2.8     |
| Genders                    | Female, Male |
| Sealing Type               | Mat Sealed   |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Sealed inline applications



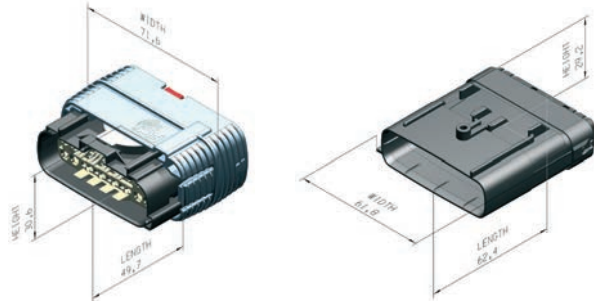
## ENVIRONMENTAL PROTECTION

IP69K

| Cavity count | Blade size (mm)    | Gender | Dimensions W x H x D (mm) | Part number | Index | Color | Other indexes offered |
|--------------|--------------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 24           | 1.5 (16) + 2.8 (8) | F      | 71.6 x 30.7 x 49.7        | 13795018    | A     | Black | B, C, D, E, F         |
| 24           | 1.5 (16) + 2.8 (8) | M      | 60.7 x 29.4 x 62.4        | 13672210    | A     | Black | B, C, D, E, F         |

Please, contact an Aptiv representative for the full part number list.

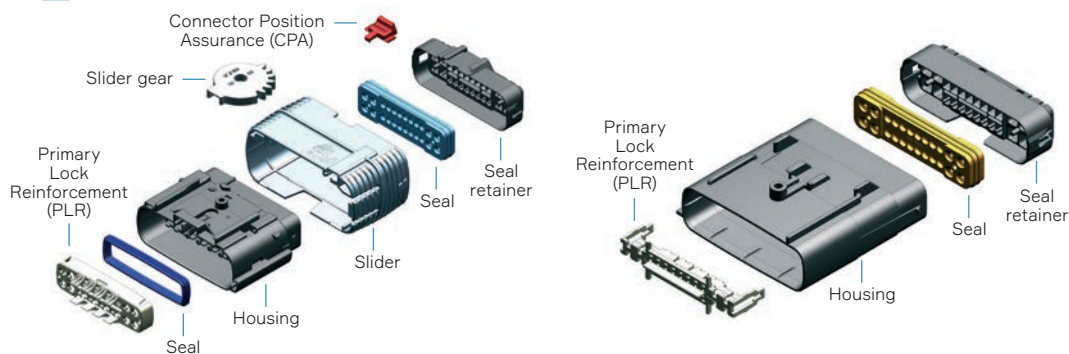
## DIMENSION MEASUREMENT SAMPLE



APEX® ErgoMate™ 24W  
Female

APEX® ErgoMate™ 24W  
Male

## EXPLODED VIEW



APEX® ErgoMate™ 24W  
Female

APEX® ErgoMate™ 24W  
Male

## COMPATIBLE WITH



# APEX<sup>®</sup> HALOGEN BULB SERIES



APEX<sup>®</sup> Halogen Bulb  
2W Female HB3/HIR2

## BENEFITS

- Heavy-duty performance
- Highest current rating
- Ergonomic design

## FEATURES

- Meets USCAR-12 & USCAR-25 design & ergonomic guidelines:
  - Ergonomic large thumb latch provides ease of de-latching with a gloved hand
  - Optional axial mate CPA feature reduces mis-mating frequency
  - Axial PLR device secures locking of female terminal in connector housing
- Footprint defined by ISO IEC60061-1
- Primary Lock Reinforcement (PLR)

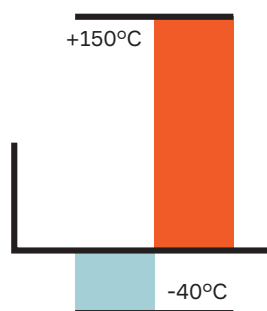


## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 2            |
| Cavity Configurations (mm) | 2.8          |
| Genders                    | Female       |
| Sealing Type               | Cable Sealed |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Halogen bulb



## ENVIRONMENTAL PROTECTION

IP69K

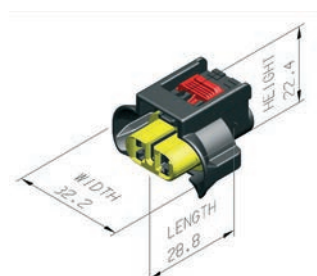
| Bulb type           | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Index | Color | Other indexes offered |
|---------------------|-----------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| H8, H11, H16        | 2.8             | F      | 32.3 x 22.5 x 31.9        | 13930730    | A     | Black | B                     |
| H9                  | 2.8             | F      | 32.3 x 22.5 x 31.9        | 33517462    | A     | Black | B                     |
| HIR2, HB4, HB4A     | 2.8             | F      | 29.7 x 17.0 x 33.0        | 33503725    | A     | Black | B                     |
| HIR1, H12, H10, HB3 | 2.8             | F      | 29.7 x 17.0 x 33.0        | 33503726    | A     | Black | B                     |

## COMPATIBLE SEALS

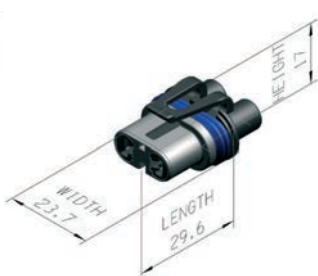
| Type        | Applicable Wire Size (mm²) | Color | Restraint Ring                                                                     | Part Number |
|-------------|----------------------------|-------|------------------------------------------------------------------------------------|-------------|
|             |                            |       |  |             |
| Cable Seal  | 0.35 - 1.0                 | Pink  | Yes                                                                                | 35296484    |
| Cable Seal  | 1.0 - 2.0                  | Black | Yes                                                                                | 15518641    |
| Cable Seal  | 2.5 - 4.0                  | Brown | Yes                                                                                | 15458498    |
| Cavity Plug | N/A                        | Blue  | Yes                                                                                | 35478080    |
|             |                            |       |  |             |
| Cavity Plug | N/A                        | White | No                                                                                 | 15305170    |

Please, contact an Aptiv representative for the full part number list.

## DIMENSION MEASUREMENT SAMPLE

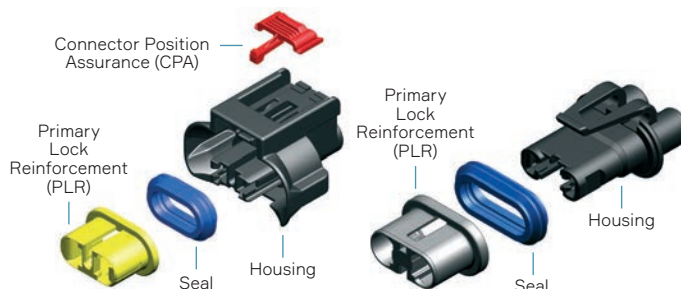


APEX® Halogen Bulb 2W  
Female H8/H9/H11



APEX® Halogen Bulb 2W  
Female HB3/HIR2

## EXPLODED VIEW



APEX® Halogen Bulb 2W  
Female H8/H9/H11

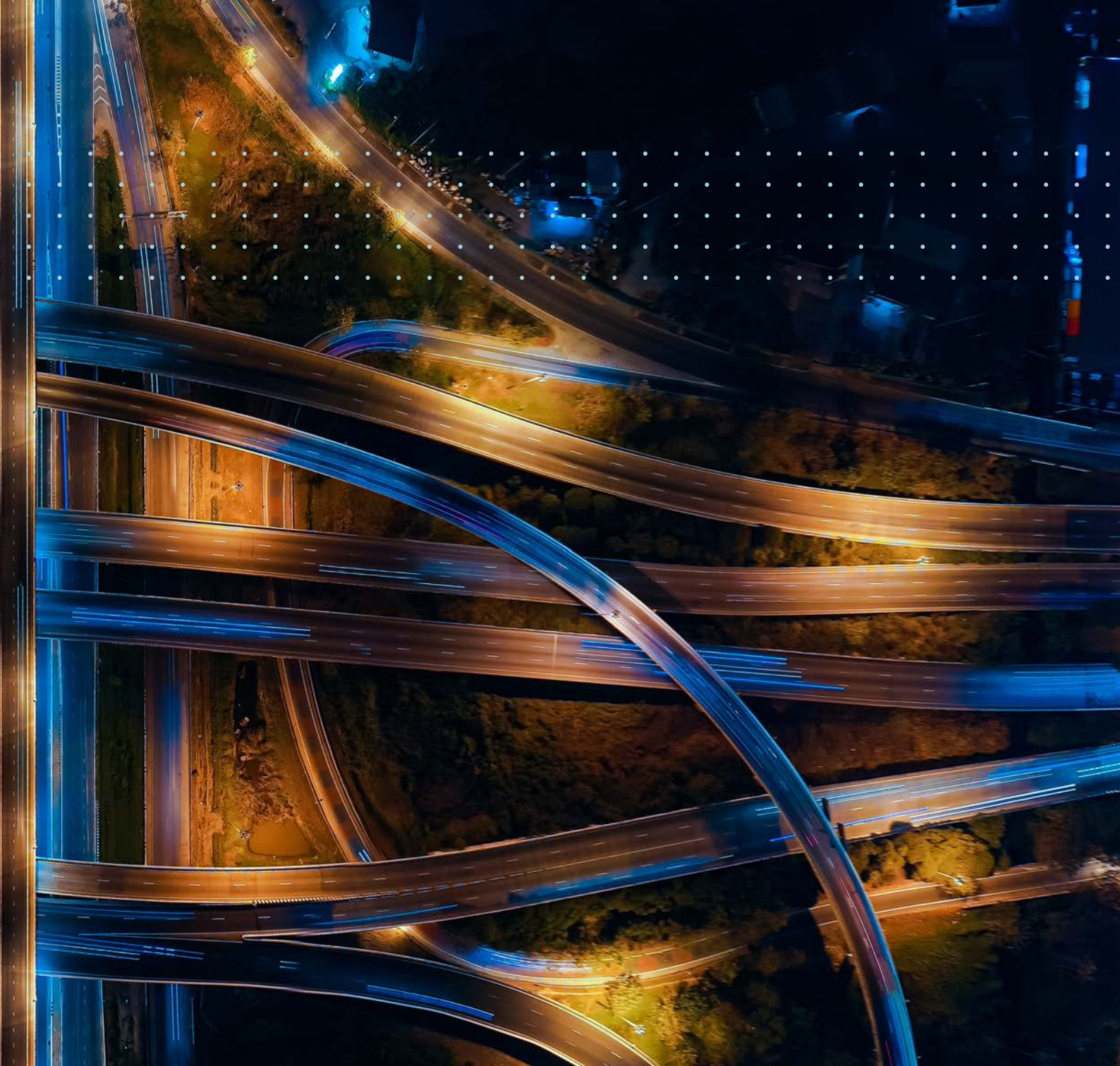
APEX® Halogen Bulb 2W  
Female HB3/HIR2

## COMPATIBLE WITH



APEX® 2.8 Series Terminals

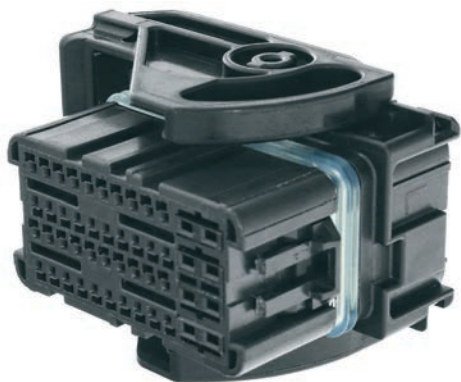




# CMC CONNECTORS AND HEADERS

# CMC CONNECTORS

32, 48, 64, 86 Way



CMC 48W Connector

## BENEFITS

- TPA\* front holder latch for lock & unlock
- Smooth guided terminal insertion
- Clean body terminals do not damage mat/block seal
- High retention force
- Standard interface interchangeable with multiple suppliers

## FEATURES

- Polarized terminals
- Mat seal is pre-closed on the 0.64 mm terminal cavities
- Easy cable assembly
- First mate last break lay-out for safe connection

\* Terminal position assurance

## TECHNICAL CHARACTERISTICS

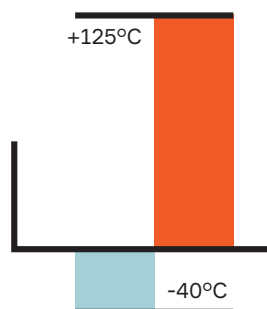
|                     |                |
|---------------------|----------------|
| Cavity Count (ways) | 32, 48, 64, 86 |
| Materials           | PBT            |
| Genders             | Female         |

## APPLICATIONS

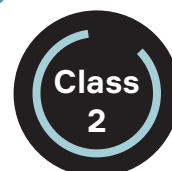
|                   |
|-------------------|
| Engine management |
| Gas converter     |
| Body control      |



### TEMPERATURE



### VIBRATION



### SEALING PROTECTION



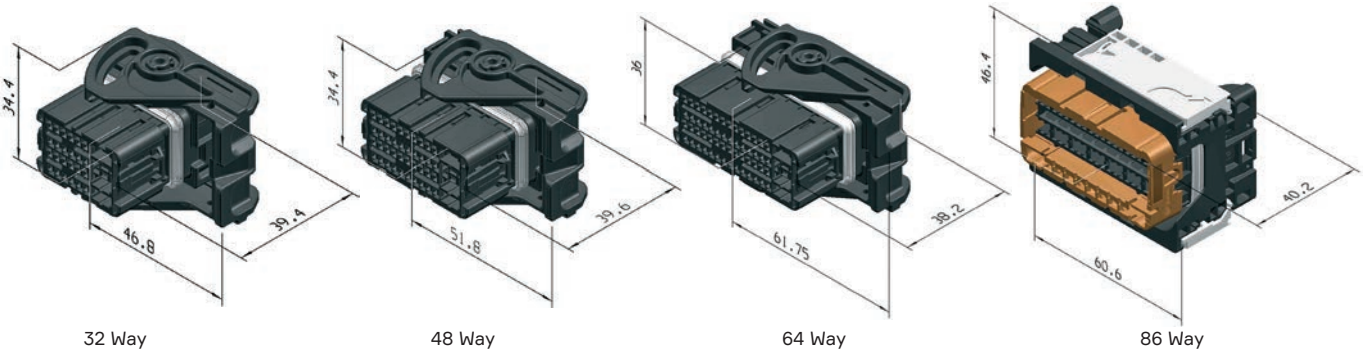
### MATING/UNMATING CYCLES

**20**  
(with tin plated terminals)

| Part number | Cavity Count (ways) | Color coding | Mating cover part number |    |          |     |
|-------------|---------------------|--------------|--------------------------|----|----------|-----|
| 13851306    | 32                  | Black        | 13851307                 |    |          |     |
| 13956255    | 48                  | Black        | 13956254                 | 0° | 33517228 | 45° |
| 13648596    | 64                  | Black        | 13648597                 |    |          |     |
| 33156001    | 86                  | Grey         | 33121915                 |    |          |     |



DIMENSION MEASUREMENT SAMPLE





COMPATIBLE WITH



CMC Covers



CMC Pin Headers



GTS 0.64 Series Terminals



GTS 1.5 Series Terminals

# CMC HEADERS

32, 48, 64 Way



CMC 32W Pin Header

## BENEFITS

- Compact and small form factor
- Sealable pin header by cover and gasket
- Tin-plated pins, silver-plated upon demand
- Through hole solder type

## FEATURES

- Standard interface interchangeable with multiple female housing suppliers
- Easy solder process to a PCB\*
- Small occupancy on the PCB\*

\* Printed circuit board



## TECHNICAL CHARACTERISTICS

|             |                     |
|-------------|---------------------|
| Orientation | 90°                 |
| Materials   | PA4.6 GF30%, CuZn30 |
| Genders     | Male                |



## APPLICATIONS

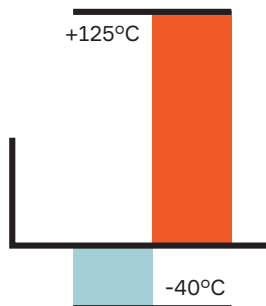
Engine management

Gas converter

Body control



## TEMPERATURE



## VIBRATION



## SEALING PROTECTION



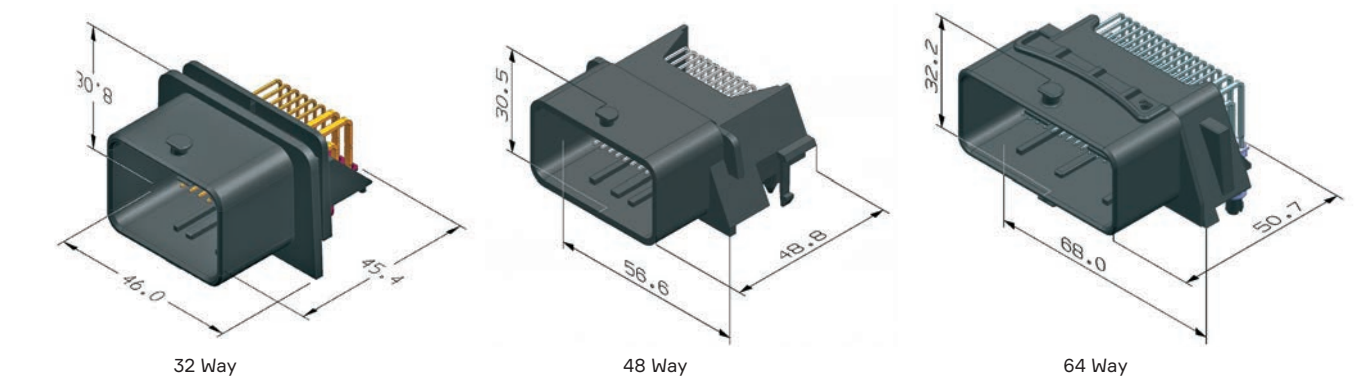
## CONNECTOR MATING FORCE

< 60 N

| Part number | Cavity count (ways) | Color coding |
|-------------|---------------------|--------------|
| 33503152    | 32                  | Blue         |
| 33503150    |                     | Black        |
| 33503149    |                     | Grey         |
| 33503151    |                     | Brown        |
| 33503457    | 48                  | Black        |
| 35110623    | 64                  | Grey         |
| 33504510    |                     | Black        |



DIMENSION MEASUREMENT SAMPLE





COMPATIBLE WITH



# CMC PIN HEADER

## 112 Way



CMC 112W Pin Header

### BENEFITS

- Compact and small form factor
- Sealable pin header by cover and gasket
- Tin-plated pins, silver-plated upon demand
- Through hole solder type

### FEATURES

- Standard interface interchangeable with multiple female housing suppliers
- Easy solder process to a PCB\*
- Small occupancy on the PCB\*

\* Printed circuit board



### TECHNICAL CHARACTERISTICS

|             |                     |
|-------------|---------------------|
| Orientation | 90°                 |
| Materials   | PA4.6 GF30%, CuZn30 |
| Genders     | Male                |

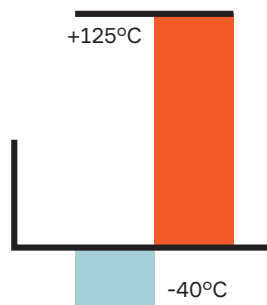


### APPLICATIONS

|                   |
|-------------------|
| Engine management |
| Gas converter     |
| Body control      |



### TEMPERATURE



### VIBRATION



### SEALING PROTECTION



### CONNECTOR MATING FORCE

< 60 N







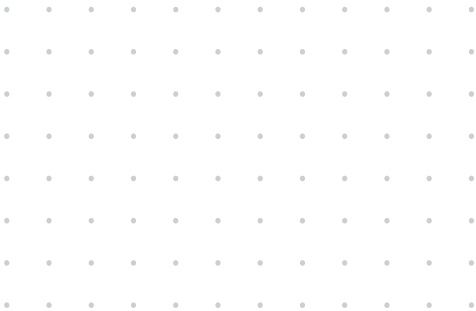
# CTS TERMINALS AND CONNECTORS



# CTS CONNECTORS

## SELECTOR GUIDE

Compact Terminal System - The CTS Terminal Automotive Connectors offer a robust terminal design, improved ergonomics for protected and easier mating, and withstand high vibration up to V4. CTS Terminal series are widely used in engine sensors and harsh environment applications. These terminals provide the perfect combination of electrical and mechanical performance for nearly any automotive application.

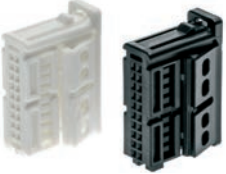


| Product Series    | NanoPack™ CTS Unsealed USCAR |
|-------------------|------------------------------|
| Application       | Interior, Multimedia, HVAC   |
| Blade Size        | 0.5                          |
| # of Cavities     | 4, 8, 12, 16, 20, 24         |
| Gender            | F                            |
| Temperature Class | T1                           |
| IP Rating         | NA                           |
| CPA               | Yes                          |
| See Pages         | 76-77                        |

\* available upon request  
This document is non-contractual and is for information purpose only





|                                                                                    |                                                                                    |                                                                                              |                                                                                      |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |           |  |
| <b>NanoPack™ CTS<br/>Unsealed AK</b>                                               | <b>NanoPack™ CTS<br/>Sealed AK</b>                                                 | <b>CTS 1.2<br/>SensoMate™</b>                                                                | <b>CTS 2.8 Sealed</b>                                                                |
| Cockpit, Dashboard, Ambient lightning, Ethernet                                    | Radars, Cameras, Tire pressure sensors exposed to humidity and liquid splashes     | Chassis, Engine compartment, On-Engine-Mount, Severe Gearbox applications, Sensors/Actuators | Sealed inline and device applications                                                |
| 0.5                                                                                | 0.5                                                                                | 1.2                                                                                          | 2.8                                                                                  |
| 2, 3, 4, 5, 6*, 7, 8*, 9*, 10, 11, 12*, 14, 16*, 18*, 20, 22                       | 8, 12                                                                              | 2, 3, 4, 5, 6                                                                                | 2, 3, 4                                                                              |
| F                                                                                  | F                                                                                  | F, M (2 to 4 way)                                                                            | F                                                                                    |
| T2                                                                                 | T2                                                                                 | T4 up to 175°C                                                                               | T3                                                                                   |
| NA                                                                                 | IPX9K<br>IP67                                                                      | IPX9K<br>IP68                                                                                | IP69K                                                                                |
| Optional                                                                           | Optional                                                                           | Yes                                                                                          | Yes                                                                                  |
| 78-79                                                                              | 80-81                                                                              | 82-83                                                                                        | 84-85                                                                                |



# CTS 0.5 LOCKING LANCE TERMINALS



CTS 0.5 Locking Lance  
Female & Male Terminals

## BENEFITS

- Compatible with industry standard cavities
- Robust terminal design with several design features providing a perfect electrical function
- 100% vision controlled manufacturing

## FEATURES

- Protected mating area
- One robust primary locking lance
- High performance copper alloy



## AVAILABLE CONFIGURATIONS

|                                    |                                    |
|------------------------------------|------------------------------------|
| Terminal Construction              | One-piece Female<br>Two-piece Male |
| Locking Mechanism                  | Tanged / Lanced                    |
| Crimp Validated to                 | LV214 / USCAR-21                   |
| Blade Size (mm)                    | 0.5                                |
| Wire Gage Range (AWG)              | 26 - 22                            |
| Wire Gage Range (mm <sup>2</sup> ) | 0.08 - 0.35                        |
| Genders                            | Female, Male                       |
| Sealing Options                    | Block Seal, Unsealed               |
| Plating Options                    | Sn, Ag                             |
| Mating Tab Dimension (mm)          | 0.4 x 0.5                          |



## TECHNICAL CHARACTERISTICS

|                        |                   |
|------------------------|-------------------|
| Contact Resistance     | 7 mΩ              |
| Contact Mating Force   | 2.0 N             |
| Contact Unmating Force | 2.0 N             |
| Mating Cycles          | 20 (Sn) / 50 (Ag) |
| Cavity Pullout Force   | > 30 N            |
| Center Line Spacing    | 1.2 x 1.8 mm      |



MAX  
TEMP



Ag



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



| Sealing    | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Block Seal | F      | Sn      | 26                    | 0.08 - 0.14                        | 33124946    | Ag                       |
| Block Seal | F      | Sn      | 24 - 22               | 0.17 - 0.35                        | 33124945    | Ag                       |
| Unsealed   | M      | Sn      | 26                    | 0.08 - 0.14                        | 35195964    | Ag                       |
| Unsealed   | M      | Sn      | 24 - 22               | 0.17 - 0.35                        | 35195966    | Ag                       |

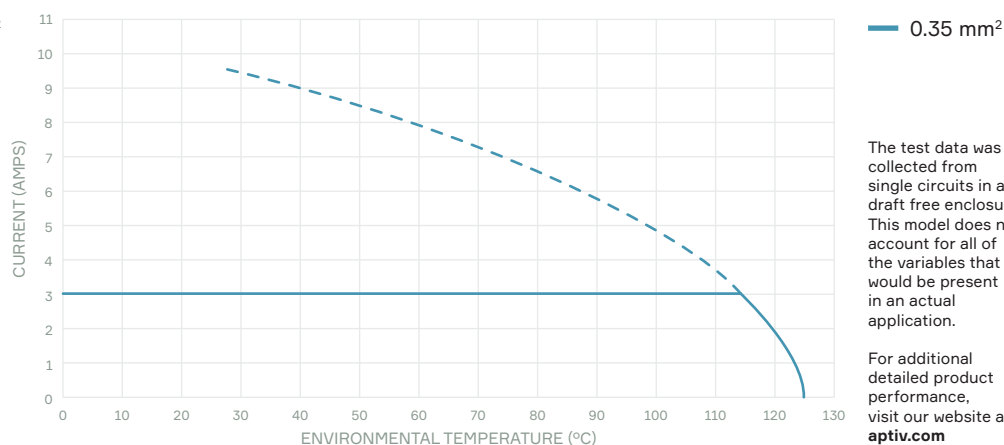
## DERATING CURVES

Cable range: 0.08 - 0.35 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: Pin  
 0.5 x 0.4 mm

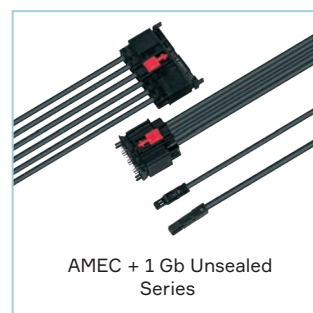
\* For reference only

Terminal without housing

acc. to DIN EN 60512-5-2



## COMPATIBLE WITH



# CTS 0.5 FEMALE CLEAN BODY TERMINALS



## BENEFITS

- Compatible with industry standard cavities
- Robust terminal design with several design features providing a perfect electrical function
- 100% vision controlled manufacturing

## FEATURES

- Protected mating area
- Robust one side cavity flex lock feature
- High performance copper alloy



## AVAILABLE CONFIGURATIONS

|                                    |                       |
|------------------------------------|-----------------------|
| Terminal Construction              | One-piece             |
| Locking Mechanism                  | Tangless / Clean Body |
| Crimp Validated to                 | VW60330, VW75174      |
| Blade Size                         | 0.5                   |
| Wire Gage Range (AWG)              | 26 - 22               |
| Wire Gage Range (mm <sup>2</sup> ) | 0.08 - 0.35           |
| Genders                            | Female                |
| Sealing Options                    | Mat Seal              |
| Plating Options                    | Ag, Sn                |
| Mating Tab Dimension               | 0.5 x 0.4             |

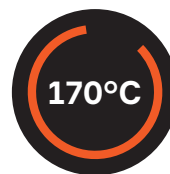


## TECHNICAL CHARACTERISTICS

|                        |                   |
|------------------------|-------------------|
| Contact Resistance     | 10 mΩ             |
| Contact Mating Force   | 4.5 N             |
| Contact Unmating Force | 4.5 N             |
| Mating Cycles          | 20 (Sn) / 50 (Ag) |
| Cavity Pullout Force   | 55 N              |
| Center Line Spacing    | 1.8 x 1.5 mm      |



MAX  
TEMP



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



\*with 0.13 mm<sup>2</sup>  
\*\*with 0.35 mm<sup>2</sup>

| Sealing    | Gender | Plating | Wire Size Range (AWG) | Wire Size Range (mm) <sup>2</sup> | Part Number |
|------------|--------|---------|-----------------------|-----------------------------------|-------------|
| Block Seal | F      | Sn      | 26                    | 0.08 - 0.14                       | 33367567    |
| Block Seal | F      | Ag      | 24 - 22               | 0.17 - 0.35                       | 33367568    |
| Block Seal | F      | Sn      | 26                    | 0.08 - 0.14                       | 33389499    |
| Block Seal | F      | Ag      | 24 - 22               | 0.17 - 0.35                       | 33389500    |

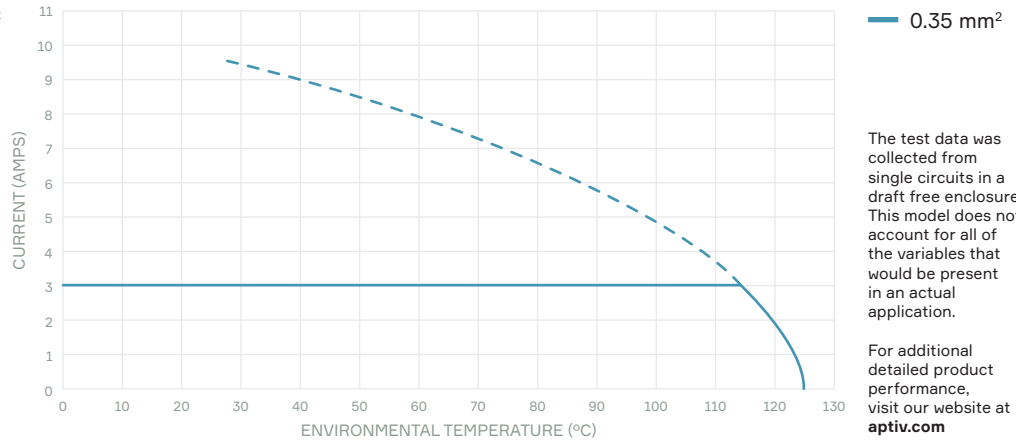
## DERATING AND TEMP RISE CURVE

Cable range: 0.08 - 0.35 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit  
 in free air\*  
 Mated to: Pin  
 0.5 x 0.4 mm

\* For reference only

Terminal without housing

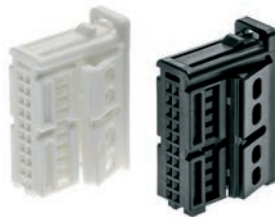
acc. to DIN EN 60512-5-2



## COMPATIBLE WITH (COMPATIBLE FAMILIES)



NanoPack™ CTS USCAR Unsealed



NanoPack™ CTS AK Unsealed



NanoPack™ CTS AK Sealed

# CTS 1.2 FEMALE LOCKING LANCE TERMINALS



CTS 1.2 Locking Lance  
Female Terminals

## BENEFITS

- Compatible with industry standard cavities
- Robust terminal design with several design features providing a perfect electrical function for two different tab thicknesses in one part
- 100% vision controlled manufacturing

## FEATURES

- Protected mating area
- One robust primary locking lance
- High performance copper alloy
- Shape inside four electrical contact points
- Ultrasonic welding ability according to AK 43-2



## AVAILABLE CONFIGURATIONS

|                           |                        |
|---------------------------|------------------------|
| Terminal Construction     | Two-piece              |
| Locking Mechanism         | Tanged / Lanced        |
| Crimp Validated to        | VW60330, VW75174-2     |
| Blade Size (mm)           | 1.2                    |
| Wire Gage Range (AWG)     | 24 - 16                |
| Wire Gage Range (mm²)     | 0.13 - 1.5             |
| Genders                   | Female                 |
| Sealing Options           | Unsealed, Cable Sealed |
| Plating Options           | Sn, Ag                 |
| Mating Tab Dimension (mm) | 1.2 x 0.6 (up to 0.64) |



## TECHNICAL CHARACTERISTICS

|                        |                                                |
|------------------------|------------------------------------------------|
| Contact Resistance     | 2.5 mΩ                                         |
| Contact Mating Force   | 4.2 N                                          |
| Contact Unmating Force | 4.2 N                                          |
| Mating Cycles          | 20 (Sn) / 30 (Ag)                              |
| Center Line Spacing    | Unsealed: 2.5 x 2.5 mm<br>Sealed: 4.5 x 4.5 mm |



MAX  
TEMP



Ag



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



| Sealing      | Gender | Plating | Wire size range(AWG) | Wire size range (mm²) | Part number | Other available platings |
|--------------|--------|---------|----------------------|-----------------------|-------------|--------------------------|
| Unsealed     | F      | Sn      | 24                   | 0.13                  | 13948572    | Ag, Au                   |
| Unsealed     | F      | Sn      | 22                   | 0.20 - 0.35           | 13959129    | Ag, Au                   |
| Unsealed     | F      | Sn      | 20                   | 0.50 - 0.75           | 13959126    | Ag, Au                   |
| Unsealed     | F      | Sn      | 18 - 16              | 1.0 - 1.5             | 13959123    | Ag, Au                   |
| Cable Sealed | F      | Sn      | 24                   | 0.13                  | 13959117    | Ag, Au                   |
| Cable Sealed | F      | Sn      | 22                   | 0.20 - 0.35           | 13959120    | Ag, Au                   |
| Cable Sealed | F      | Sn      | 20                   | 0.50 - 0.75           | 13959141    | Ag, Au                   |
| Cable Sealed | F      | Sn      | 18 - 16              | 1.0                   | 13948568    | Ag, Au                   |

## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm²) | Color  | Restraint Ring                                                                     | Part Number |
|------------|----------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                            |        |  |             |
| Cable Seal | 0.13 - 0.35                | Yellow | Yes                                                                                | 13887349    |
| Cable Seal | 0.5 - 1.0                  | Green  | Yes                                                                                | 13887350    |
|            |                            |        |  |             |
| Cable Seal | 0.13 - 0.35                | Black  | No                                                                                 | 33120594    |
| Cable Seal | 0.35 - 0.5                 | Red    | No                                                                                 | 15327913    |
| Cable Seal | 0.5 - 1.0                  | Gray   | No                                                                                 | 15327918    |
| Cable Seal | 1.0 - 1.25                 | Yellow | No                                                                                 | 15339412    |

Please, contact an Aptiv representative for the full part number list.

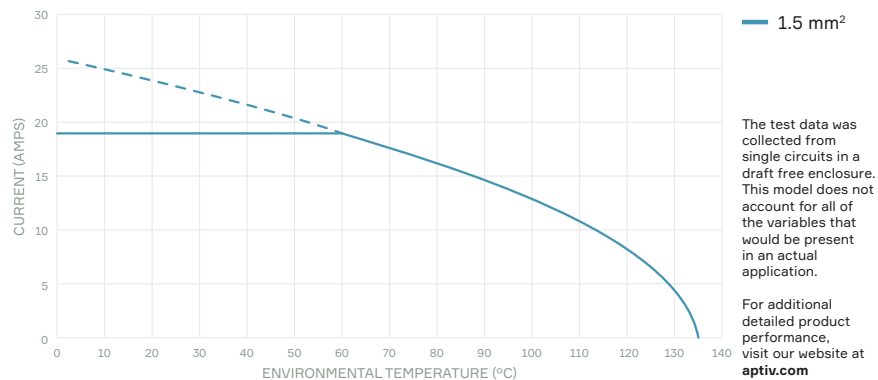
## DERATING CURVES

Cable range: 0.13 - 1.5 mm²  
Crimp method: Standard  
Contact plating: Sn  
Test method: Single circuit in free air\*  
Mated to: Pin 1.2 x 0.6 mm

\* For reference only

Terminal without housing

acc. to DIN EN 60512-5-2



## COMPATIBLE WITH



# CTS 1.2 MALE LOCKING LANCE TERMINALS



## BENEFITS

- Compatible with industry standard cavities
- Robust terminal design with several design features providing a perfect electrical function for two different tab thicknesses in one part
- 100% vision controlled manufacturing

## FEATURES

- One robust primary locking lance
- High performance copper alloy
- Ultrasonic welding ability according to AK 43-2



## AVAILABLE CONFIGURATIONS

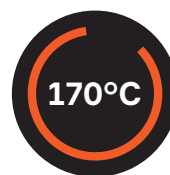
|                                    |                        |
|------------------------------------|------------------------|
| Terminal Construction              | Two-piece              |
| Locking Mechanism                  | Tanged / Lanced        |
| Crimp Validated to                 | VW60330, VW75174-2     |
| Blade Size                         | 1.2                    |
| Wire Gage Range (AWG)              | 24 - 16                |
| Wire Gage Range (mm <sup>2</sup> ) | 0.13 - 1.5             |
| Genders                            | Male                   |
| Sealing Options                    | Unsealed, Cable Sealed |
| Plating Options                    | Sn, Ag, Au             |
| Mating Tab Dimension               | 1.2 x 0.6              |



## TECHNICAL CHARACTERISTICS

|                      |                   |
|----------------------|-------------------|
| Contact Resistance   | ≤ 5mΩ             |
| Contact Mating Force | 4.2 N             |
| Mating Cycles        | 20 (Sn) / 30 (Ag) |
| Cavity Pullout Force | min. 55 N         |
| Center Line Spacing  | 2.5 - 4.5mm       |

MAX  
TEMP



Ag

MAX  
VIBRATION



MAX CURRENT  
AT 80°C



| Blade Size (mm) | Sealing      | Gender | Plating | Wire Size Range (AWG) | Wire Size Range (mm) <sup>2</sup> | Part Number | Other Available Platings |
|-----------------|--------------|--------|---------|-----------------------|-----------------------------------|-------------|--------------------------|
| 1.2             | Unsealed     | M      | Sn      | 24                    | 0.13                              | 35350104    | Ag, Au                   |
| 1.2             | Unsealed     | M      | Sn      | 22                    | 0.22 - 0.35                       | 35350105    | Ag, Au                   |
| 1.2             | Unsealed     | M      | Sn      | 20                    | 0.50 - 0.75                       | 35350106    | Ag, Au                   |
| 1.2             | Unsealed     | M      | Sn      | 18                    | 1                                 | 35505514    | Ag, Au                   |
| 1.2             | Unsealed     | M      | Sn      | 16                    | 1.5                               | 35350107    | Ag, Au                   |
| 1.2             | Cable Sealed | M      | Sn      | 24                    | 0.13                              | 35350198    | Ag, Au                   |
| 1.2             | Cable Sealed | M      | Sn      | 22                    | 0.22 - 0.35                       | 35350202    | Ag, Au                   |
| 1.2             | Cable Sealed | M      | Sn      | 20                    | 0.50 - 0.75                       | 35350200    | Ag, Au                   |
| 1.2             | Cable Sealed | M      | Sn      | 18                    | 1                                 | 35350201    | Ag, Au                   |

## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                                         |        |  |             |
| Cable Seal | 0.13 - 0.35                             | Yellow | Yes                                                                                | 13887349    |
| Cable Seal | 0.5 - 1.0                               | Green  | Yes                                                                                | 13887350    |
|            |                                         |        |  |             |
| Cable Seal | 0.13 - 0.35                             | Black  | No                                                                                 | 33120594    |
| Cable Seal | 0.35 - 0.5                              | Red    | No                                                                                 | 15327913    |
| Cable Seal | 0.5 - 1.0                               | Gray   | No                                                                                 | 15327918    |
| Cable Seal | 1.0 - 1.25                              | Yellow | No                                                                                 | 15339412    |

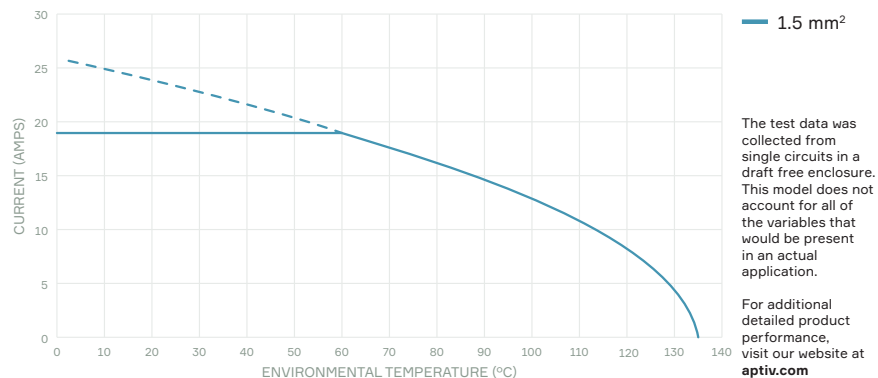
## DERATING CURVES

Cable range: 0.13 - 1.5 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: Pin 1.2 x 0.6 mm

\* For reference only

Terminal without housing

acc. to DIN 60512-5-2



## HOUSING COMPATIBILITY (COMPATIBLE FAMILIES)



# CTS 1.5 LOCKING LANCE SEALED TERMINALS



CTS 1.5 Locking Lance Sealed  
Female & Male Terminals

## BENEFITS

- Compatible with industry standard cavities
- Robust terminal design with several design features providing perfect electrical function for two different tab thicknesses in one part
- 100% vision controlled manufacturing

## FEATURES

- Usable for tab thicknesses of 0.6 mm and 0.8 mm
- Protected mating area
- Two-tang primary lock
- Stainless steel spring
- High pre-loaded contact area



## AVAILABLE CONFIGURATIONS

|                                    |                    |
|------------------------------------|--------------------|
| Terminal Type                      | Box & Blade        |
| Locking Mechanism                  | Tanged / Lanced    |
| Crimp Validated to                 | LV 214             |
| Blade Size (mm)                    | 1.5                |
| Wire Gage Range (AWG)              | 28 - 16            |
| Wire Gage Range (mm <sup>2</sup> ) | 0.08 - 1.5         |
| Genders                            | Female, Male (TTS) |
| Sealing Options                    | Cable Sealed       |
| Plating Options                    | Sn, Ag, Au         |



## TECHNICAL CHARACTERISTICS

|                        |                                                       |
|------------------------|-------------------------------------------------------|
| Contact Resistance     | < 2 mΩ                                                |
| Contact Mating Force   | < 7.0 N                                               |
| Contact unmating Force | < 7.0 N                                               |
| Mating Cycles          | 20 (Sn) / 50 (Ag) / 100 (Au)                          |
| Cavity Pullout Force   | > 55 N (Primary lock)<br>> 90 N (Secondary lock)      |
| Center Line Spacing    | 4.0 x 4.0 mm / 3.5 x 4.0 mm<br>with 2.0 mm displacing |



MAX  
TEMP



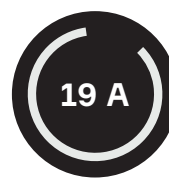
Ag



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



with 1.5 mm<sup>2</sup>

| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Cable Sealed | F      | Sn      | 24 - 22               | 0.22 - 0.35                        | 15432208    | Ag, Au                   |
| Cable Sealed | F      | Sn      | 20 - 16               | 0.5 - 1.0                          | 15432210    | Ag, Au                   |
| Cable Sealed | F      | Sn      | 16                    | 1.0 - 1.5                          | 15432212    | Ag, Au                   |
| Cable Sealed | M      | Sn      | 24 - 22               | 0.22 - 0.35                        | 15482330    | Ag, Au                   |
| Cable Sealed | M      | Sn      | 20 - 16               | 0.5 - 1.0                          | 15482331    | Ag, Au                   |
| Cable Sealed | M      | Sn      | 16                    | 1.0 - 1.5                          | 15482332    | Ag, Au                   |

Please, contact an Aptiv representative for the full part number list.

## COMPATIBLE SEALS

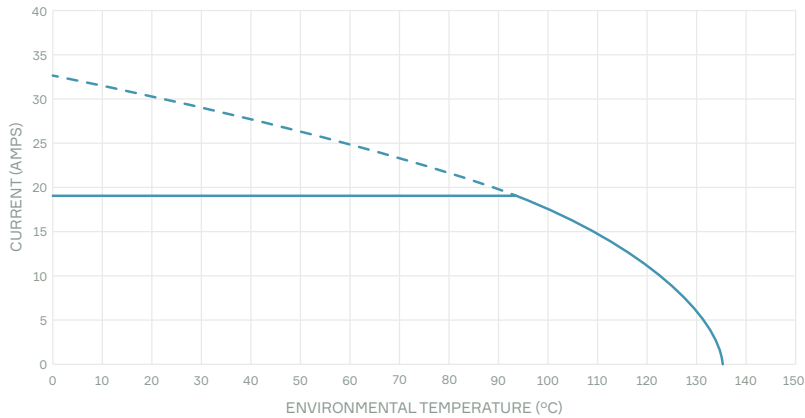
| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring | Part Number |
|------------|-----------------------------------------|--------|----------------|-------------|
| Cable Seal | 0.13 - 0.35                             | Yellow | Yes            | 13887349    |
|            | 0.5 - 1.0                               | Green  | Yes            | 13887350    |
|            | 1.0 - 1.5                               | Red    | Yes            | 35297210    |
| Cable Seal | 0.13 - 0.35                             | Black  | No             | 33120594    |
|            | 0.35 - 0.5                              | Red    | No             | 15327913    |
|            | 0.5 - 1.0                               | Gray   | No             | 15327918    |
|            | 1.0 - 1.25                              | Yellow | No             | 15339412    |

## DERATING CURVE

Aptiv taxi: 15432214  
Cable range: 0.08 - 1.5 mm<sup>2</sup>  
Crimp method: Standard  
Contact plating: Sn  
Test method: Single circuit in free air\*  
Mated to: CTS 1.5 male terminals

\* For reference only

Determined with tab, size 1.5 mm x 0.8 mm, tin plated



1.5 mm<sup>2</sup>

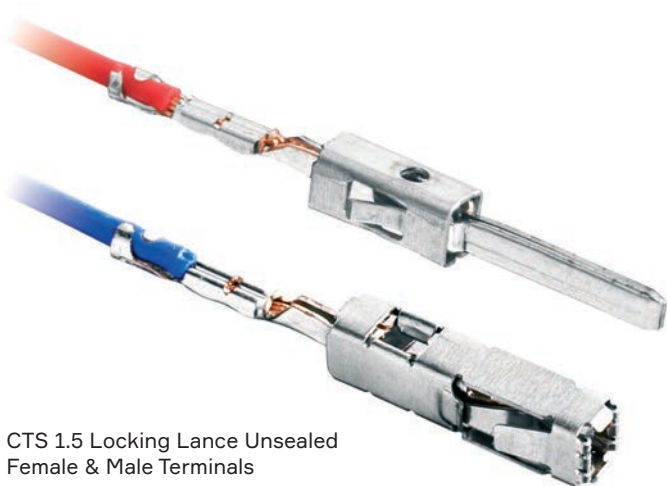
The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](http://aptiv.com)

## COMPATIBLE WITH



# CTS 1.5 LOCKING LANCE UNSEALED TERMINALS



CTS 1.5 Locking Lance Unsealed  
Female & Male Terminals

## BENEFITS

- Compatible with industry standard cavities
- Robust terminal design with several design features providing perfect electrical function for two different tab thicknesses in one part
- 100% vision controlled manufacturing

## FEATURES

- Usable for tab thicknesses of 0.6 mm and 0.8 mm
- Protected mating area
- Two-tang primary lock
- Stainless steel spring
- High pre-loaded contact area



## AVAILABLE CONFIGURATIONS

|                                    |                    |
|------------------------------------|--------------------|
| Terminal Type                      | Box & Blade        |
| Locking Mechanism                  | Tanged / Lanced    |
| Crimp Validated to                 | LV 214             |
| Blade Size (mm)                    | 1.5                |
| Wire Gage Range (AWG)              | 28 - 16            |
| Wire Gage Range (mm <sup>2</sup> ) | 0.08 - 1.5         |
| Genders                            | Female, Male (TTS) |
| Sealing Options                    | Unsealed           |
| Plating Options                    | Sn, Au             |



## TECHNICAL CHARACTERISTICS

|                        |                                                       |
|------------------------|-------------------------------------------------------|
| Contact Resistance     | < 2 mΩ                                                |
| Contact Mating Force   | < 7.0 N                                               |
| Contact unmating Force | < 7.0 N                                               |
| Mating Cycles          | 20 (Sn) / 50 (Ag) / 100 (Au)                          |
| Cavity Pullout Force   | > 55N (Primary lock)<br>> 90N (Secondary lock)        |
| Center Line Spacing    | 4.0 x 4.0 mm / 3.5 x 4.0 mm<br>with 2.0 mm displacing |



MAX  
TEMP



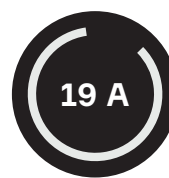
Ag



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



with 1.5 mm<sup>2</sup>

| Sealing  | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|----------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Unsealed | F      | Sn      | 28 - 26               | 0.08 - 0.18                        | 13819159    | Au                       |
| Unsealed | F      | Sn      | 24 - 22               | 0.22 - 0.35                        | 15432237    | Au                       |
| Unsealed | F      | Sn      | 20 - 16               | 0.5 - 1.0                          | 15432235    | Au                       |
| Unsealed | F      | Sn      | 16                    | 1.0 - 1.5                          | 15432233    | Au                       |
| Unsealed | M      | Sn      | 28 - 26               | 0.08 - 0.18                        | 13733481    | Au                       |
| Unsealed | M      | Sn      | 24 - 22               | 0.22 - 0.35                        | 15396711    | Au                       |
| Unsealed | M      | Sn      | 20 - 16               | 0.5 - 1.0                          | 15396712    | Au                       |
| Unsealed | M      | Sn      | 16                    | 1.0 - 1.5                          | 15482337    | Au                       |
| Unsealed | M      | Sn      | (2)22 - (2)20         | (2)0.35 - (2)0.50                  | 15396713    | Au                       |

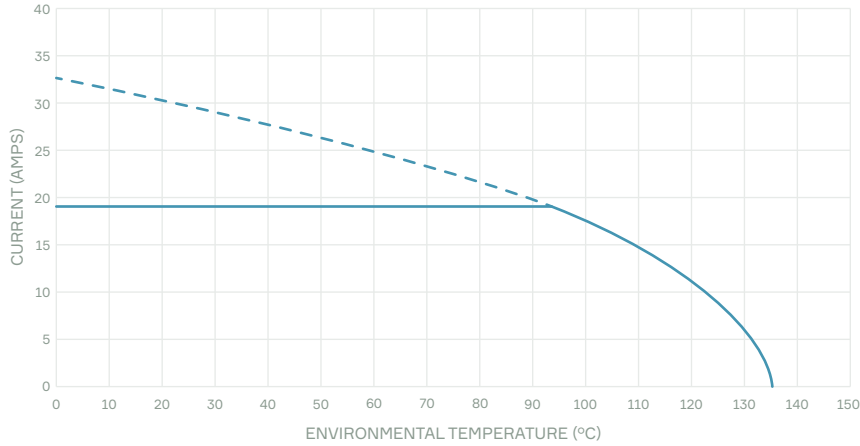
Please, contact an Aptiv representative for the full part number list.

## DERATING CURVE

Aptiv taxi: 15432239  
 Cable range: 0.08 - 1.5 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: CTS 1.5 male terminals

\* For reference only

Determined with tab, size 1.5 mm x 0.8 mm, tin plated



— 1.5 mm<sup>2</sup>

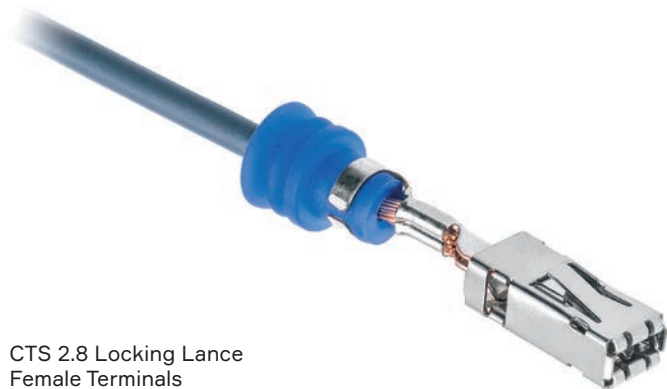
The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](http://aptiv.com)

## COMPATIBLE WITH



# CTS 2.8 LOCKING LANCE TERMINALS



CTS 2.8 Locking Lance  
Female Terminals

## BENEFITS

- Compatible with industry standard cavities
- Robust terminal design with several design features providing a perfect electrical function for two different tab thicknesses in one part
- 100% vision controlled manufacturing

## FEATURES

- Protected mating area
- Usable for tab thicknesses of 0.6 and 0.8 mm
- Two-tang primary lock
- Stainless steel spring
- High pre-loaded contact area



## AVAILABLE CONFIGURATIONS

|                                    |                                |
|------------------------------------|--------------------------------|
| Terminal Construction              | Two-piece                      |
| Locking Mechanism                  | Tanged / Lanced                |
| Crimp Validated to                 | USCAR 14 / LV214 (slow motion) |
| Blade Size (mm)                    | 2.8                            |
| Wire Gage Range (AWG)              | 24 - 14                        |
| Wire Gage Range (mm <sup>2</sup> ) | 0.22 - 2.5                     |
| Genders                            | Female                         |
| Sealing Options                    | Unsealed, Cable Sealed         |
| Plating Options                    | Sn, Ag                         |
| Mating Tab Dimension (mm)          | 2.8 x 0.8                      |



## TECHNICAL CHARACTERISTICS

|                        |                                          |
|------------------------|------------------------------------------|
| Contact Resistance     | < 4 mΩ                                   |
| Contact Mating Force   | < 10 N                                   |
| Contact Unmating Force | > 2 N                                    |
| Mating Cycles          | 10 (Sn) / 25 (Ag)                        |
| Cavity Pullout Force   | > 80 N                                   |
| Center Line Spacing    | Unsealed: 5 x 5.5 mm<br>Sealed: 5 x 6 mm |



| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Unsealed     | F      | Sn      | 24 - 22               | 0.22 - 0.35                        | 15457847    | Ag                       |
| Unsealed     | F      | Sn      | 20 - 18               | 0.5 - 1.0                          | 15457848    | Ag                       |
| Unsealed     | F      | Sn      | 16 - 14               | 1.5 - 2.5                          | 15457849    | Ag                       |
| Cable Sealed | F      | Sn      | 24 - 22               | 0.22 - 0.35                        | 15446673    | Ag                       |
| Cable Sealed | F      | Sn      | 20 - 18               | 0.5 - 1.0                          | 15446674    | Ag                       |
| Cable Sealed | F      | Sn      | 16 - 14               | 1.5 - 2.5                          | 15446675    | Ag                       |

## COMPATIBLE SEALS

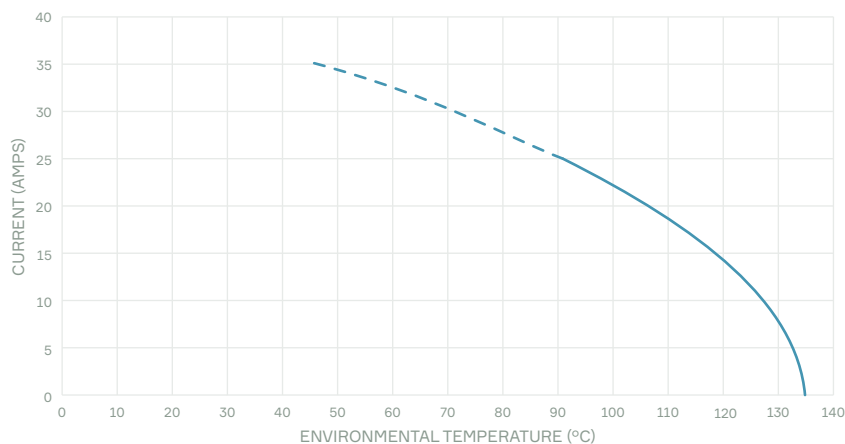
| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring | Part Number |
|------------|-----------------------------------------|--------|----------------|-------------|
| Cable Seal | 0.35 - 1.0                              | Blue   | Yes            | 15339967    |
|            | 1.25 - 2.5                              | White  | Yes            | 15339838    |
| Cable Seal | 0.35 - 0.75                             | Blue   | No             | 15324974    |
|            | 0.5 - 1.0                               | Red    | No             | 15327786    |
|            | 1.25 - 2.0                              | Red    | No             | 15324973    |
|            | 2.5                                     | Yellow | No             | 10779161    |

Please, contact an Aptiv representative for the full part number list.

## DERATING CURVES

Cable range: 0.22 - 2.5 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit  
 in free air\*  
 Mated to: DCS-2 / TTS  
 male  
 (2.8 x 0.8 mm)

\* For reference only



— 2.5 mm<sup>2</sup>

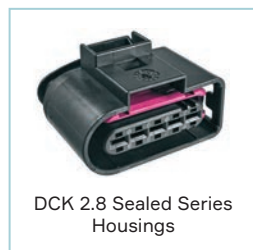
The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](http://aptiv.com)

Terminal without housing

acc. to DIN EN 60512-5-2

## COMPATIBLE WITH



# CTS 6.3 FEMALE LOCKING LANCE TERMINALS



CTS 6.3 Locking Lance  
Female Terminals

## BENEFITS

- Compatible with industry standard cavities
- Robust terminal design with several design features providing a perfect electrical function for two different tab thicknesses in one part
- 100% vision controlled manufacturing

## FEATURES

- Protected mating area
- Usable for tab thicknesses of 0.6 and 0.8 mm
- Two-tang primary lock
- Stainless steel spring
- High pre-loaded contact area



## AVAILABLE CONFIGURATIONS

|                                    |                        |
|------------------------------------|------------------------|
| Terminal Construction              | Two-piece              |
| Locking Mechanism                  | Tanged / Lanced        |
| Crimp Validated to                 | USCAR-21 (2014)        |
| Blade Size (mm)                    | 5.8                    |
| Wire Gage Range (AWG)              | 22 - 9                 |
| Wire Gage Range (mm <sup>2</sup> ) | 0.35 - 6.0             |
| Genders                            | Female                 |
| Sealing Options                    | Unsealed, Cable Sealed |
| Plating Options                    | Sn, Ag                 |
| Mating Tab Dimension (mm)          | 5.8 x 0.8              |



## TECHNICAL CHARACTERISTICS

|                        |                                                |
|------------------------|------------------------------------------------|
| Contact Resistance     | < 4 mΩ                                         |
| Contact Mating Force   | < 20 N                                         |
| Contact Unmating Force | > 4 N                                          |
| Mating Cycles          | 10 (Sn) / 20 (Ag)                              |
| Center Line Spacing    | Unsealed: 8.0 x 6.0 mm<br>Sealed: 9.0 x 9.0 mm |



MAX  
TEMP



Ag



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Unsealed     | F      | Sn      | 22                    | 0.35                               | 13976098    | Ag                       |
| Unsealed     | F      | Sn      | 20 - 17               | 0.5 - 1.0                          | 13976099    | Ag                       |
| Unsealed     | F      | Sn      | 16 - 14               | 1.5 - 2.5                          | 13976100    | Ag                       |
| Unsealed     | F      | Sn      | 14 - 12               | 2.5 - 4.0                          | 13976101    | Ag                       |
| Unsealed     | F      | Sn      | 12 - 8                | 4.0 - 6.0                          | 13976102    | Ag                       |
| Cable Sealed | F      | Sn      | 22                    | 0.35                               | 13976114    | Ag                       |
| Cable Sealed | F      | Sn      | 20 - 17               | 0.5 - 1.0                          | 13976115    | Ag                       |
| Cable Sealed | F      | Sn      | 16 - 14               | 1.5 - 2.5                          | 13976116    | Ag                       |
| Cable Sealed | F      | Sn      | 14 - 12               | 2.5 - 4.0                          | 13976117    | Ag                       |
| Cable Sealed | F      | Sn      | 12 - 8                | 4.0 - 6.0                          | 13976118    | Ag                       |

## COMPATIBLE SEALS

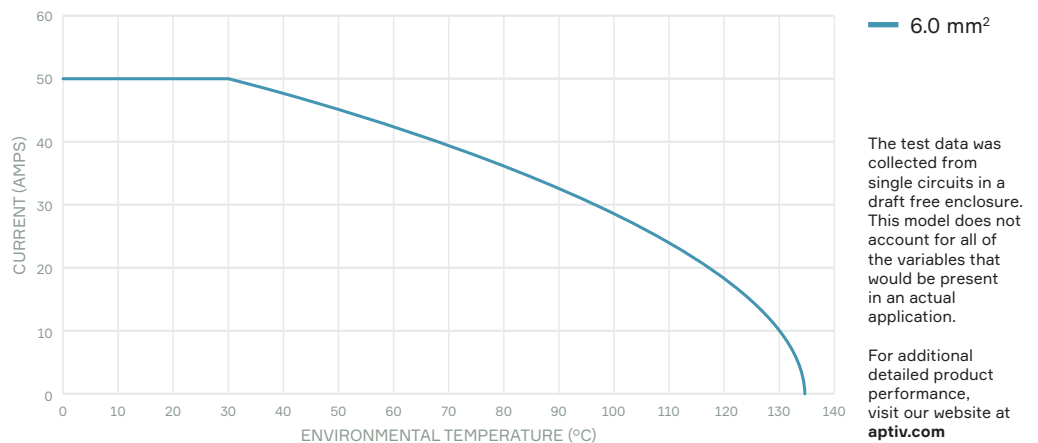
| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                                         |        |  |             |
| Cable Seal | 0.35 - 1.0                              | Yellow | No                                                                                 | 15363779    |
| Cable Seal | 1.25 - 2.0                              | White  | No                                                                                 | 15363604    |
| Cable Seal | 2.5 - 4.0                               | Red    | No                                                                                 | 15327864    |
| Cable Seal | 5.0 - 6.0                               | Green  | No                                                                                 | 15363605    |

Please, contact an Aptiv representative for the full part number list.

## DERATING CURVES

Cable range: 0.35 - 6.0 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: Tab (5,8 x 0,8 mm) Sn

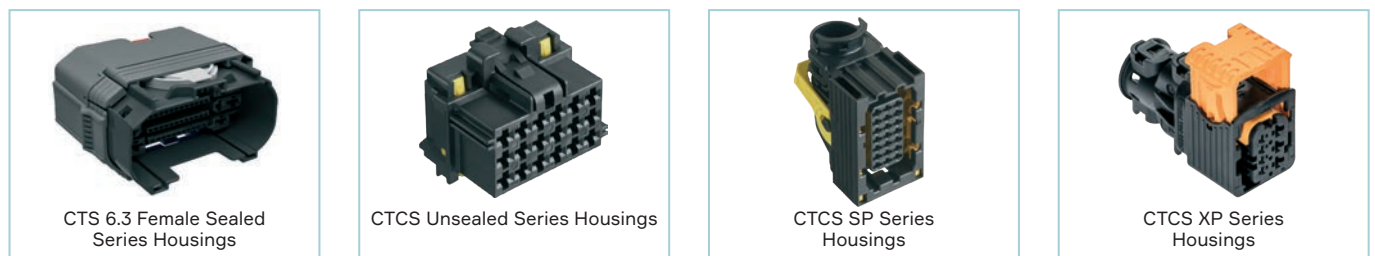
\* For reference only



Terminal without housing

acc. to DIN EN 60512-5-2

## COMPATIBLE WITH



# CTS 9.5 FEMALE LOCKING LANCE TERMINALS



CTS 9.5 Locking Lance  
Female Terminal



## AVAILABLE CONFIGURATIONS

|                                    |                        |
|------------------------------------|------------------------|
| Terminal Construction              | Two-piece              |
| Locking Mechanism                  | Tanged, Lanced         |
| Crimp Validated to                 | VW60330; VW75174-2     |
| Blade Size (mm)                    | 9.5                    |
| Wire Gage Range (AWG)              | 2 - 6                  |
| Wire Gage Range (mm <sup>2</sup> ) | 2.5 - 16               |
| Genders                            | Female                 |
| Sealing Options                    | Unsealed, Cable Sealed |
| Plating Options                    | Sn, Ag                 |
| Mating Tab Dimension (mm)          | 9.5 x 1.2              |

## BENEFITS

- Mechanical locking of terminal box assures ultrasonic welding robustness
- Compatible with industry standard cavities
- Robust terminal design with several design features providing a perfect electrical function
- 100% vision controlled manufacturing

## FEATURES

- Two-tang primary lock
- Stainless steel spring
- High performance copper alloy
- Available in several cross sections & platings
- Ultrasonic welding ability according to AK 43-2



## TECHNICAL CHARACTERISTICS

|                        |                                                    |
|------------------------|----------------------------------------------------|
| Contact Resistance     | < 1 mΩ                                             |
| Contact Mating Force   | < 25 N                                             |
| Contact Unmating Force | > 25 N                                             |
| Mating Cycles          | 20 (Sn) / 20 (Ag)                                  |
| Cavity Pullout Force   | 200 N                                              |
| Center Line Spacing    | Unsealed: 12.5 x 12.5 mm<br>Sealed: 13.0 x 13.0 mm |



MAX  
TEMP



MAX  
VIBRATION



MAX CURRENT  
AT 80°C



| Sealing      | Gender | Plating | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|--------------|--------|---------|------------------------------------|-------------|--------------------------|
| Unsealed     | F      | Sn      | 2.5 - 4.0                          | 35256137    | Ag                       |
| Unsealed     | F      | Sn      | 6.0 - 10.0                         | 35256142    | Ag                       |
| Unsealed     | F      | Sn      | 16.0                               | 35256148    | -                        |
| Cable Sealed | F      | Sn      | 2.5 - 4.0                          | 35256145    | Ag                       |
| Cable Sealed | F      | Sn      | 6.0 - 10.0                         | 35256152    | Ag                       |

## COMPATIBLE SEALS

| Type       | Applicable wire size (mm <sup>2</sup> ) | Color | Restraint ring | Part number |
|------------|-----------------------------------------|-------|----------------|-------------|
| Cable Seal | 2.5                                     | Blue  | No             | 13756673    |
| Cable Seal | 4.0 - 6.0                               | Green | No             | 13834764    |
| Cable Seal | 4.0 - 8.0                               | Black | No             | 13834763    |
| Cable Seal | 5.0 - 8.0                               | Black | No             | 15327788    |

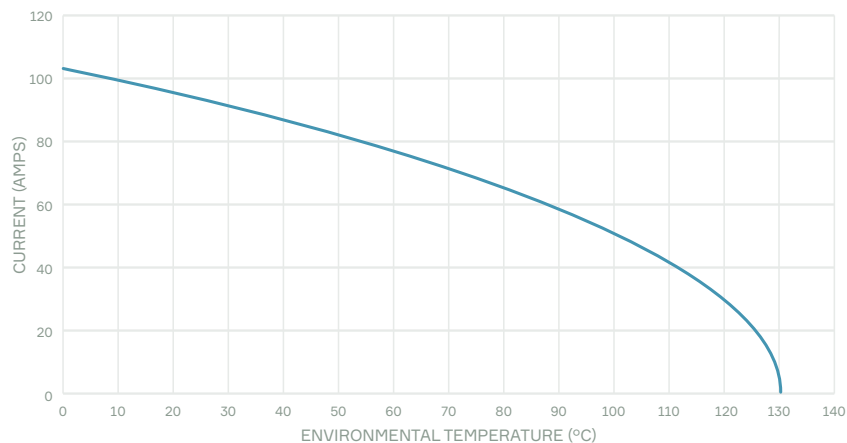
## DERATING CURVES

Cable range: 2.5 - 16 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: Tab  
 9.5 x 1.2 mm

\* For reference only

Terminal without housing

acc. to DIN EN 60512-5-2

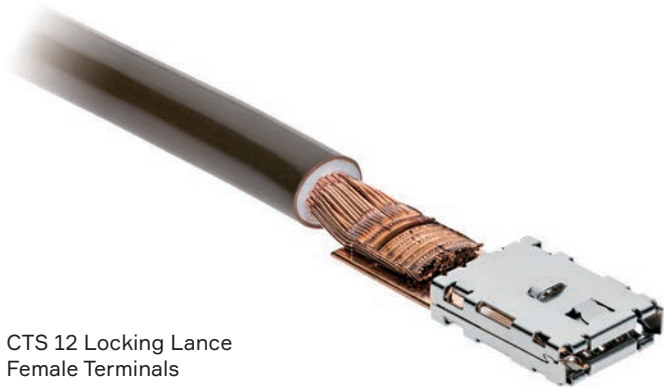


— 10.0 mm<sup>2</sup>

The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](http://aptiv.com)

# CTS 12 FEMALE LOCKING LANCE TERMINALS



CTS 12 Locking Lance  
Female Terminals

## BENEFITS

- Patented system provides best in class performance over the full temperature range
- 90/180° cable orientation thanks to welding pad solution
- Welding pad designed for cross sections of: 10 - 35 mm<sup>2</sup>
- Aluminum and copper wire versions available
- Improved contact point overlapping comparing to competition

## FEATURES

- Mechanical locking of terminal box assures ultrasonic welding robustness
- Improved pull-out force
- Protected against mis-engagement
- Best in class vibration and power capability



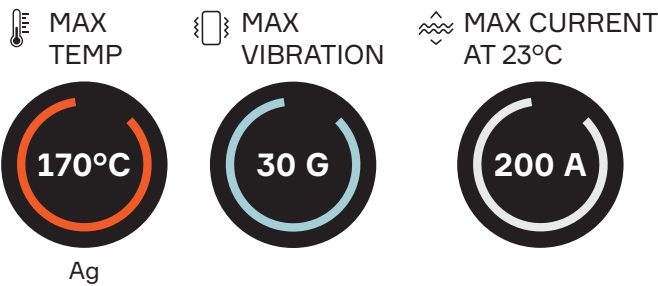
## AVAILABLE CONFIGURATIONS

|                                    |                  |
|------------------------------------|------------------|
| Terminal Construction              | Two-piece        |
| Locking Mechanism                  | Tanged / Lanced  |
| Blade Size (mm)                    | 12               |
| Wire Gage Range (AWG)              | 7 - 2            |
| Wire Gage Range (mm <sup>2</sup> ) | 10 - 35          |
| Genders                            | Female           |
| Sealing Options                    | Unsealed, Sealed |
| Plating Options                    | Sn, Ag           |
| Mating Tab Dimension (mm)          | 12 x 0.8         |



## TECHNICAL CHARACTERISTICS

|                        |                   |
|------------------------|-------------------|
| Contact Resistance     | < 5 mΩ            |
| Contact Mating Force   | < 17 N            |
| Contact Unmating Force | > 4 N             |
| Mating Cycles          | 20 (Sn) / 20 (Ag) |



| Sealing          | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings | Other available configurations |
|------------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|--------------------------------|
| Unsealed, Sealed | F      | Sn      | 7 - 2                 | 10 - 35                            | 33312673    | Ag                       | 90° version                    |



## DERATING CURVES

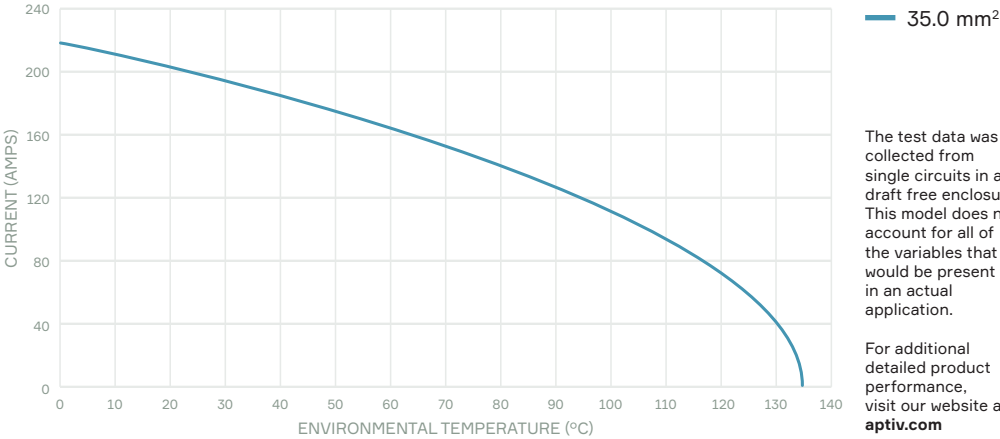
Cable range:  
Crimp method:  
Contact plating:  
Test method:  
Mated to:

10 - 35 mm<sup>2</sup>  
Standard  
Sn  
Single circuit  
in free air\*  
Tab 12 x 0.8

\* For reference only

Terminal whitouth housing

acc. to DIN EN 60512-5-2



# NanoPack™ CTS

## UNSEALED SERIES

USCAR

NanoPack™ CTS  
8W Female



NanoPack™ CTS  
24W Female



### BENEFITS

- Heavy-duty performance
- Ergonomic design
- Robust contact geometry

### FEATURES

- Compliant with USCAR design guidelines and performance standards
- Industry standard footprint
- Independent Secondary Lock (ISL) to detect partially installed terminals
- Best-in-class lock overstress protection

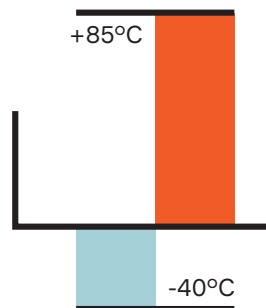


### AVAILABLE CONFIGURATIONS

|                            |                      |
|----------------------------|----------------------|
| Cavity Count (ways)        | 4, 8, 12, 16, 20, 24 |
| Cavity Configurations (mm) | 0.5                  |
| Genders                    | Female               |
| Sealing Type               | Unsealed             |
| Centerline Spacing (mm)    | 2.0                  |



### TEMPERATURE



### VIBRATION



### APPLICATIONS

Interior, Multimedia, HVAC



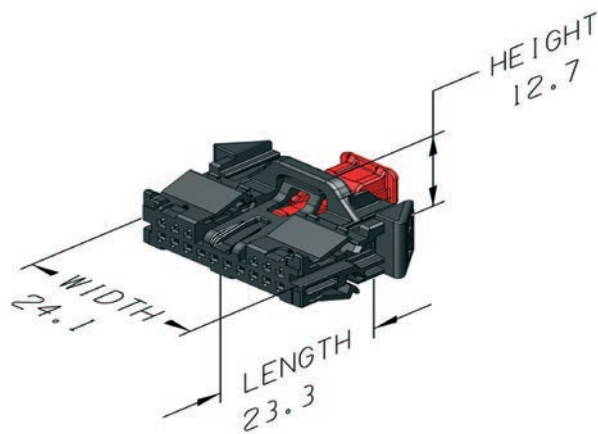
### SEALING CLASS



| Cavity count | Blade size (mm) | Gender | Dimensions W x H x L (mm) | Part number | Index | Color | CPA | Other indexes offered | USCAR footprint |
|--------------|-----------------|--------|---------------------------|-------------|-------|-------|-----|-----------------------|-----------------|
| 4            | 0.5             | F      | 12.1 x 12.7 x 23.3        | 33283024    | A     | Black | Yes | B, C, D               | 050-U-004-1-Z02 |
| 8            | 0.5             | F      | 20.1 x 12.7 x 23.3        | 35068228    | A     | Black | Yes | B, C, D               | 050-U-008-1-Z02 |
| 12           | 0.5             | F      | 20.1 x 12.7 x 23.3        | 33283034    | A     | Black | Yes | B, C, D               | 050-U-012-2-Z02 |
| 16           | 0.5             | F      | 24.1 x 12.7 x 23.3        | 33365975    | A     | Black | Yes | B, C, D               | 050-U-016-2-Z01 |
| 20           | 0.5             | F      | 35.1 x 12.7 x 23.3        | 33305409    | A     | Black | Yes | B, C, D               | 050-U-020-2-Z01 |
| 24           | 0.5             | F      | 39.1 x 12.7 x 23.3        | 33359134    | A     | Black | Yes | B, C, D               | 050-U-024-2-Z01 |

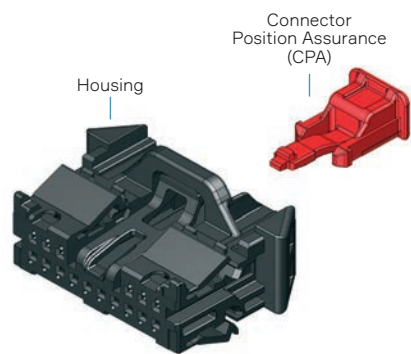


DIMENSION MEASUREMENT SAMPLE



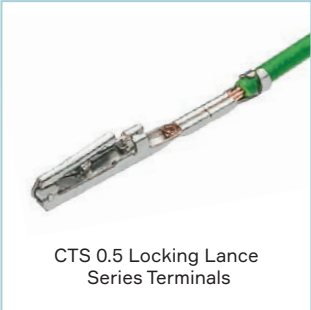


EXPLODED VIEW



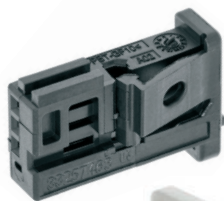


COMPATIBLE WITH



# NanoPack™ CTS

## UNSEALED SERIES AK



NanoPack™ CTS 3W  
Female 1 row



NanoPack™ CTS 20W  
Female 2 rows



NanoPack™ CTS 20W  
Female 2 rows with CPA

### BENEFITS

- Miniaturized packages for low pin count interfaces
- Industry standard solution
- Designed for automated harness assembly

### FEATURES

- According to VDA/AK interface standard S1034801 (1 row) & S1051201 (2 row)
- Centerlines miniaturized interfaces
- CPA (Connector Position Assurance) version is possible for 2 row configurations, like the 20 way which has the outer dimensions of a 22 way without CPA



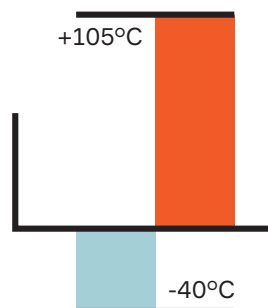
### AVAILABLE CONFIGURATIONS

|                            |                                         |
|----------------------------|-----------------------------------------|
| Cavity Count (ways) 1 row  | 2, 3, 4, 5, 6*, 7, 8*, 9*, 10, 11       |
| Cavity Count (ways) 2 rows | 4*, 6, 8, 10, 12*, 14, 16*, 18*, 20, 22 |
| Cavity Configurations (mm) | 0.5                                     |
| Cable range (mm²)          | 0.08 - 0.35                             |
| Genders                    | Female                                  |
| Sealing Type               | Unsealed                                |
| Centerline Spacing (mm)    | 1.8 (1 row); 1.8 x 1.5 (2 row)          |

\* Available upon request.



### TEMPERATURE



### VIBRATION



### MATING FORCES



### APPLICATIONS

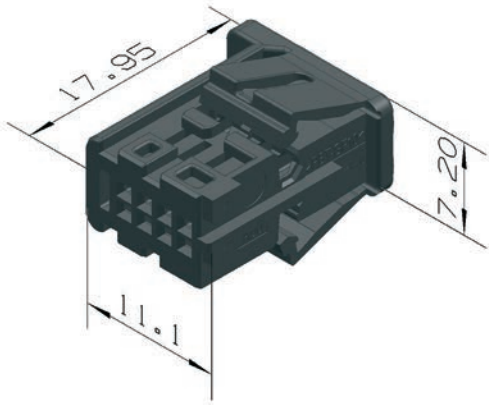
Cockpit, Dashboard, Ambient lightning, Ethernet

| Cavity count | Blade size (mm) | Gender | Dimensions W x H x L (mm) | Part number | Number of rows | Index | Color | Other indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|----------------|-------|-------|-----------------------|
| 2            | 0.5             | F      | 4.2 x 7.7 x 17.9          | 33257462    | 1              | A     | Black | B, C, D, Z            |
| 3            | 0.5             | F      | 4.2 x 9.5 x 17.9          | 33257463    | 1              | A     | Black | B, C, D, Z            |
| 4            | 0.5             | F      | 4.2 x 13.1 x 17.9         | 33257466    | 1              | A     | Black | B, C, D, Z            |
| 5            | 0.5             | F      | 4.2 x 14.9 x 17.9         | 33266274    | 1              | A     | Black | B, C, D, Z            |
| 7            | 0.5             | F      | 4.2 x 16.7 x 17.9         | 33257467    | 1              | A     | Black | B, C, D, Z            |
| 10           | 0.5             | F      | 4.2 x 22.1 x 17.9         | 33257468    | 1              | A     | Black | B, C, D, Z            |
| 11           | 0.5             | F      | 4.2 x 23.9 x 17.9         | 33257469    | 1              | A     | Black | B, C, D, Z            |
| 6            | 0.5             | F      | 7.2 x 9.3 x 17.9          | 33322916    | 2              | A     | Black | B, C, D, Z            |
| 8            | 0.5             | F      | 7.2 x 11.1 x 17.9         | 33322907    | 2              | A     | Black | B, C, D, Z            |
| 10           | 0.5             | F      | 7.2 x 12.9 x 17.9         | 33322906    | 2              | A     | Black | B, C, D, Z            |
| 14           | 0.5             | F      | 7.2 x 16.5 x 17.9         | 33322904    | 2              | A     | Black | B, C, D, Z            |
| 20           | 0.5             | F      | 7.2 x 21.9 x 17.9         | 33322902    | 2              | A     | Black | B, C, D, Z            |
| 20*          | 0.5             | F      | 7.2 x 21.6 x 26.8**       | 35192072    | 2              | A     | Black | B, C, D, Z            |
| 22           | 0.5             | F      | 7.2 x 23.7 x 17.9         | 33329555    | 2              | A     | Black | B, C, D, Z            |

\* with CPA (Backshell PN : 35192068)  
 \*\* dimensions with open CPA



DIMENSION MEASUREMENT SAMPLE





COMPATIBLE WITH



# NanoPack™ CTS

## SEALED SERIES AK



NanoPack™ CTS 8W Female

### BENEFITS

- Connector Position Assurance (CPA) is optional for 8W version. Optimized space saving version without CPA, bottom or top locking latch possible
- Housings & terminals are designed as per VDA/AK guidelines

### FEATURES

- Designed for high temperatures and vibration profiles
- Aptiv is responsible for the sealed 0.5 footprint at VDA/AK
- Ergonomic handling and touching surface as per manual mating guideline (USCAR)



### AVAILABLE CONFIGURATIONS

|                                |                                                 |
|--------------------------------|-------------------------------------------------|
| Cavity Count (ways)            | 8, 12*                                          |
| Cavity Configurations (mm)     | 0.5                                             |
| Cable range (mm <sup>2</sup> ) | 0.13 - 0.35                                     |
| Genders                        | Female                                          |
| TPA Type                       | Pre-assembled ASL**                             |
| CPA                            | Optional                                        |
| Sealing Type                   | Multi wire mat seal                             |
| Centerline Spacing (mm)        | 1.8                                             |
| Specification                  | VW75174-LV214; IEC68;<br>DIN: IEC60512; EN60068 |

\* Other cavities available, please consult us

\*\* ASL – Active Secondary lock



### APPLICATIONS

Mid and short range radars, Cameras, Tire pressure sensors exposed to humidity and liquid splashes

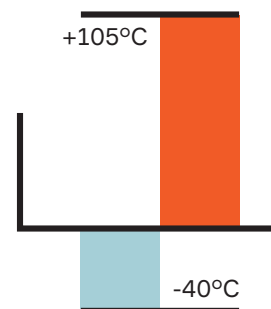


### TECHNICAL CHARACTERISTICS

|                              |                                    |
|------------------------------|------------------------------------|
| Mating force                 | 75 N                               |
| Contact pull out force       | ≥ 25 N primary<br>≥ 35 N secondary |
| Contact insertion force      | ~ 2 N                              |
| Automated terminal insertion | Capable & compatible               |



### TEMPERATURE



\* Peak temperature: 130°C



### VIBRATION



### SEALING PROTECTION



\* with back shell cover

| Cavity count | Blade size (mm) | Gender | AK footprint | Dimensions W x H x L (mm) | Part number | Index | Color |
|--------------|-----------------|--------|--------------|---------------------------|-------------|-------|-------|
| 8            | 0.5             | F      | Yes          | 16.7 x 17.5 x 29.85       | 35364118    | A     | Black |
| 8            | 0.5             | F      | Yes          | 16.7 x 17.5 x 29.85       | 35371049    | B     | Black |
| 8            | 0.5             | F      | Yes          | 16.7 x 17.5 x 29.85       | 35371050    | C     | Black |
| 8            | 0.5             | F      | No           | 16.25 x 13.15 x 26.35     | 35355142    | A     | Black |
| 8            | 0.5             | F      | No           | 16.25 x 13.15 x 26.35     | 35355143    | B     | Black |
| 8            | 0.5             | F      | No           | 16.25 x 13.15 x 26.35     | 35355144    | C     | Black |
| 12           | 0.5             | F      | Yes          | 20.3 x 17.5 x 29.85       | 35511141    | A     | Black |

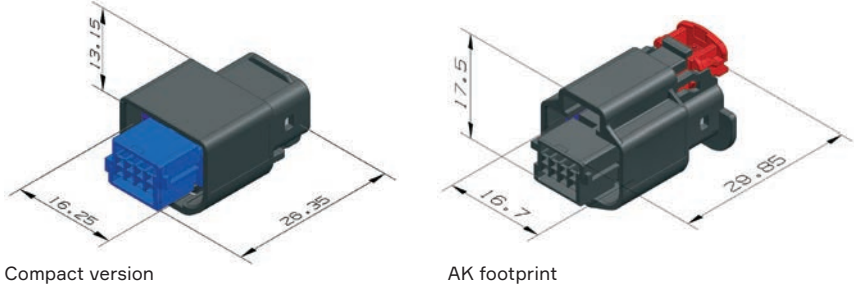


## REQUIRED ACCESSORIES

| Type  | Color | Angle     | Part number |
|-------|-------|-----------|-------------|
| Cover | Black | 180°      | Consult us  |
| Cover | Black | 90° right | Consult us  |
| Cover | Black | 90° left  | Consult us  |

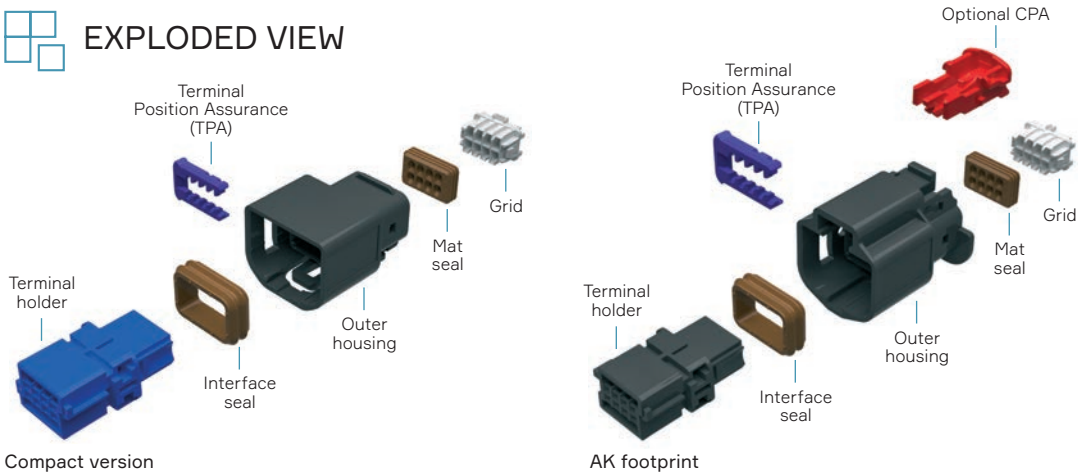


## DIMENSION MEASUREMENT SAMPLE





## EXPLODED VIEW





## COMPATIBLE WITH



# CTS 1.2 SensoMate™ SERIES

CTS 1.2 3W F short shroud  
CPA Type 2



CTS 1.2 3W F short shroud  
CPA Type 1



Male 3W



CTS 1.2 3W F long shroud



## AVAILABLE CONFIGURATIONS

|                            |                                                                             |
|----------------------------|-----------------------------------------------------------------------------|
| Cavity Count (ways)        | 2, 3, 4, 5, 6                                                               |
| Cavity Configurations (mm) | 1.2                                                                         |
| Genders                    | Female, Male (2-4W only)                                                    |
| Sealing Type               | Cable Sealed                                                                |
| Centerline Spacing (mm)    | 4.0                                                                         |
| Indexes                    | Varies, See Part List                                                       |
| TPA Type                   | Independent Secondary Lock (ISL)                                            |
| CPA                        | Yes                                                                         |
| Validation                 | GMW 3191;<br>RND5-B-00029 V.2 for short shroud;<br>Others please consult us |



## APPLICATIONS

Chassis, Engine compartment, On-Engine-Mount,  
Severe Gearbox Applications, Sensors/Actuators

## BENEFITS

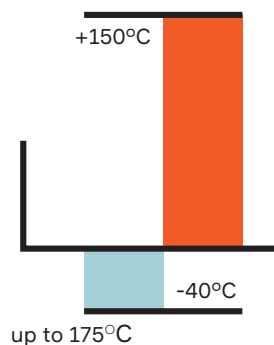
- VDA/USCAR 1.2 mm at 4 mm pitch interface compatible (universal)
- Industry standard 1.2 terminal cavity capability
- Short shroud design for small packaging footprint and long shroud design for easy mating device

## FEATURES

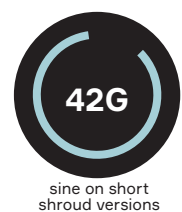
- One piece molded housing to ensure best in class sealing performance (short shroud version)
- Increased sealing performance through a unique 3 rib robust seal design (175°C version)
- Patented Smart Locking System version of the CPA to improve assembly cycle time (short shroud version)
- Compatible with wire dress back shells (short shroud version)



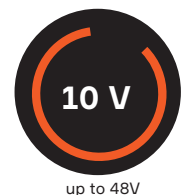
### TEMPERATURE



### VIBRATION



### SEALING CLASS



| Cavity count | Blade size | Gender | Part number | Temperature Class | CPA            | Shroud | Clip Slot | Dimensions (W x H x D) | Index | Other Indexes offered |
|--------------|------------|--------|-------------|-------------------|----------------|--------|-----------|------------------------|-------|-----------------------|
| 2            | 1.2        | F      | 35126363    | 150°C             | Type 1         | Short  | No        | 15.2 x 15 x 29.5       | A     | B, C                  |
| 3            | 1.2        | F      | 35126369    | 150°C             | Type 1         | Short  | No        | 19.2 x 15 x 29.5       | A     | B, C, D               |
| 4            | 1.2        | F      | 35126375    | 150°C             | Type 1         | Short  | No        | 24.5 x 16.3 x 29.5     | A     | B, C, D, F, G         |
| 5            | 1.2        | F      | 35126383    | 150°C             | Type 1         | Short  | No        | 28.5 x 16.3 x 29.5     | A     | B                     |
| 6            | 1.2        | F      | 35020435    | 150°C             | Type 1         | Short  | No        | 32.5 x 16.3 x 29.5     | A     | B, C, E               |
| 2            | 1.2        | F      | 35387382    | 150°C             | Type 2         | Short  | No        | 15.2 x 15 x 26         | A     | B, C                  |
| 3            | 1.2        | F      | 35387389    | 150°C             | Type 2         | Short  | No        | 19.2 x 15 x 26         | A     | B, C, D               |
| 2            | 1.2        | F      | 35449381    | 175°C             | Type 1         | Short  | No        | 15.2 x 15 x 29.5       | A     | B, C                  |
| 3            | 1.2        | F      | 35449383    | 175°C             | Type 1         | Short  | No        | 19.2 x 15 x 29.5       | A     | B, C, D               |
| 4            | 1.2        | F      | 35449387    | 175°C             | Type 1         | Short  | No        | 24.5 x 16.3 x 29.5     | A     | B, C, D, F, G         |
| 5            | 1.2        | F      | 35449388    | 175°C             | Type 1         | Short  | No        | 28.5 x 16.3 x 29.5     | A     | B                     |
| 6            | 1.2        | F      | 35449389    | 175°C             | Type 1         | Short  | No        | 32.5 x 16.3 x 29.5     | A     | B, C, E               |
| 2            | 1.2        | F      | 35747313    | 150°C             | Yes            | Long   | No        | 25.2 x 14.6 x 32.8     | A     | B, C, E, F            |
| 3            | 1.2        | F      | 35748524    | 150°C             | Yes            | Long   | No        | 26.2 x 14.6 x 32.8     | A     | B, C, D               |
| 4            | 1.2        | F      | 35748643    | 150°C             | Yes            | Long   | No        | 30.2 x 15.6 x 32.8     | A     | B, C, D, E, F, G, H   |
| 2            | 1.2        | F      | 35747322    | 150°C             | Yes            | Long   | Yes       | 25.2 x 18.8 x 32.8     | A     | B, C, E, F            |
| 3            | 1.2        | F      | 35748527    | 150°C             | Yes            | Long   | Yes       | 25.2 x 18.8 x 32.8     | A     | B, C, D               |
| 4            | 1.2        | F      | 35748651    | 150°C             | Yes            | Long   | Yes       | 30.2 x 19.9 x 32.8     | A     | B, C, E, F, G         |
| 2            | 1.2        | M      | 35147458    | 150°C             | Not Applicable |        | Yes       | 18.8 x 15.4 x 46.8     | A     | B, C, USCAR* E, F     |
| 3            | 1.2        | M      | 35148571    | 150°C             | Not Applicable |        | Yes       | 18.8 x 15.4 x 46.8     | A     | B, C, D               |
| 4            | 1.2        | M      | 35147457    | 150°C             | Not Applicable |        | Yes       | 24.1 x 16.5 x 46.8     | A     | B, C, USCAR* E, F, G  |

\* USCAR interface on device



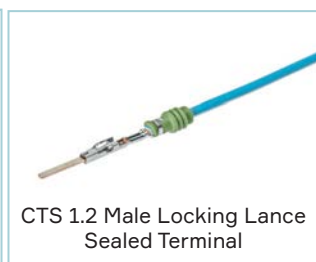
## COMPATIBLE SEALS AND ACCESORIES

| Type                                | Applicable Wire Size (mm²) | Color  | Restraint Ring | Part Number |
|-------------------------------------|----------------------------|--------|----------------|-------------|
|                                     |                            |        |                |             |
| Cable Seal                          | 0.13 - 0.35                | Black  | No             | 33120594    |
| Cable Seal                          | 0.35 - 0.5                 | Red    | No             | 15327913    |
| Cable Seal                          | 0.5 - 1.0                  | Gray   | No             | 15327918    |
| Cable Seal                          | 1.0 - 1.25                 | Yellow | No             | 15339412    |
| Cavity Plug                         | NA                         | White  | No             | 12198198    |
|                                     |                            |        |                |             |
| Cable Seal                          | 0.13 - 0.35                | Yellow | Yes            | 13887349    |
| Cable Seal                          | 0.5 - 1.0                  | Green  | Yes            | 13887350    |
| Cavity Plug                         | NA                         | Blue   | Yes            | 13887353    |
| Fixing clip for male housing slot** | NA                         | Black  | NA             | 33119512    |
| Back shell***                       | NA                         | -      | NA             | Consult us  |

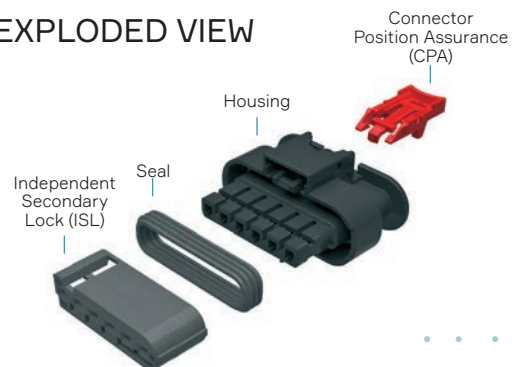
Other cable seals and cavity plugs available, please consult us. \*\* USCAR 7 mm. \*\*\* Lateral 90°, up/down 90°, 0°



## COMPATIBLE WITH



## EXPLODED VIEW



# CTS 2.8 SEALED SERIES



CTS 2.8 2W, 3W Female

## BENEFITS

- Heavy-duty performance
- Ergonomic design
- Robust contact geometry

## FEATURES

- Compliant with USCAR design guidelines and performance standards
- Industry standard footprint
- Superior single-piece housing construction
- Independent Secondary Lock (ISL) to detect partially installed terminals

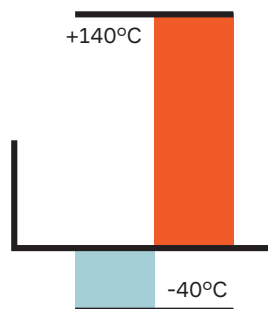


## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 2, 3, 4      |
| Cavity Configurations (mm) | 2.8          |
| Genders                    | Female       |
| Sealing Type               | Cable Sealed |
| Centerline Spacing (mm)    | 5.0          |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

On-engine sensors



## ENVIRONMENTAL PROTECTION



| Cavity count | Blade size (mm) | Gender | Dimensions W x H x L (mm) | Part number | Index | Color | Other indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 2            | 2.8             | F      | 21.6 x 23.3 x 31.5        | 35182447    | A     | Black | B, C, D               |
| 3            | 2.8             | F      | 26.6 x 25.8 x 31.5        | 35133579    | A     | Black | B, C, D               |
| 4            | 2.8             | F      | 31.6 x 27.8 x 31.5        | 35133588    | A     | Black | B, C, D               |



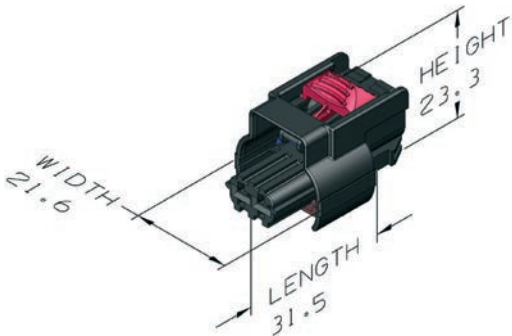
COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm²) | Color  | Restraint Ring | Part Number |
|------------|----------------------------|--------|----------------|-------------|
| Cable Seal | 0.35 - 1.0                 | Blue   | Yes            | 15339967    |
|            | 1.25 - 2.5                 | White  | Yes            | 15339838    |
| Cable Seal | 0.35 - 0.75                | Blue   | No             | 15324974    |
|            | 0.5 - 1.0                  | Red    | No             | 15327786    |
|            | 1.25 - 2.0                 | Red    | No             | 15324973    |
|            | 2.5                        | Yellow | No             | 10779161    |
|            | N/A                        | Green  | No             | 10730124    |
|            | N/A                        | Red    | No             | 12059168    |
|            |                            |        |                |             |

Please, contact an Aptiv representative for the full part number list.

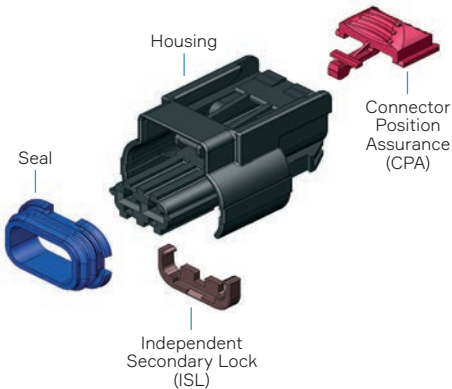


DIMENSION MEASUREMENT SAMPLE





EXPLODED VIEW





COMPATIBLE WITH







# CTCS CONNECTORS



# CTCS CONNECTORS SELECTOR GUIDE

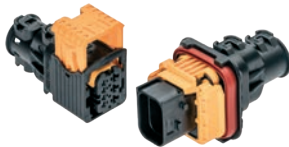
Compact Transportation Connection Systems - A versatile solution with designed in reliability and superior performance, this connection family was designed specifically for the transportation market and heavy duty applications.

The CTCS connector families have been designed to meet the demanding requirements of commercial and heavy duty applications, specifically to address new emission regulations and enable the generation of environmentally friendly vehicles.

- Application versatility
- Unparalleled reliability & performance
- Designed for the commercial vehicle market





|                   |  |  |  |
|-------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                   | CTCS Unsealed                                                                      | CTCS SP                                                                            | CTCS XP                                                                              |
| Application       | Interior                                                                           | Chassis, Engine compartment                                                        | Chassis, Engine compartment, On-engine                                               |
| Blade Size        | 1.5, 2.8, 6.3, Mixed                                                               | 1.5, 2.8, 6.3, Mixed                                                               | 1.5, 2.8, 6.3, Mixed                                                                 |
| # of Cavities     | 4, 18, 25, 36                                                                      | 15, 21, 26, 39, 62                                                                 | 2, 3, 4, 6, 7, 8, 10, 12, 15, 16, 18                                                 |
| Gender            | F                                                                                  | F, M                                                                               | F, M                                                                                 |
| Lock assist type  | Standard, Lever lock                                                               | Lever lock                                                                         | Slider lock                                                                          |
| Temperature Class | T1                                                                                 | T3                                                                                 | T3 (+140°C)                                                                          |
| IP Rating         | NA                                                                                 | IP67, IP6K7<br>IP69, IP69K                                                         | IP67, IP6K7<br>IP69, IP69K                                                           |
| CPA               | No                                                                                 | No                                                                                 | No                                                                                   |
| See Pages         | 90-91                                                                              | 92-93                                                                              | 94-95                                                                                |

*This document is non-contractual and is for information purpose only*



# CTCS UNSEALED SERIES



## BENEFITS

- Versatile connection system
- Unparalleled reliability and performance
- Designed for the transportation market

## FEATURES

- Connector locks tethered in position to prevent lock arm droop and provide consistent audible click
- Modular design for decreased number of parts
- Secondary lock for terminal unseat detection



## AVAILABLE CONFIGURATIONS

|                            |                      |
|----------------------------|----------------------|
| Cavity Count (ways)        | 4, 18, 25, 36        |
| Cavity Configurations (mm) | 1.5, 2.8, 6.3, Mixed |
| Materials                  | HB Flammability      |
| Genders                    | Female               |
| Lock Assist Type           | Standard or Lever    |

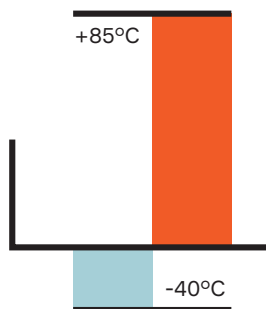


## APPLICATIONS

Cab



## TEMPERATURE



## VIBRATION



Random (Grms)



## SEALING PROTECTION (IEC, ISO)

IP5,  
IP5K



# CTCS SP SERIES



CTCS SP  
2.8 21W Female



CTCS SP  
2.8 21W Male

## BENEFITS

- Versatile connection system
- Unparalleled reliability and performance
- Designed for the transportation market

## FEATURES

- Lever lock integrated into the back shell for easier plugging
- Locking features on slides prevent accidental release of connectors prior to full mating



## AVAILABLE CONFIGURATIONS

|                            |                      |
|----------------------------|----------------------|
| Cavity Count (ways)        | 15, 21, 26, 39, 62   |
| Cavity Configurations (mm) | 1.5, 2.8, 6.3, Mixed |
| Materials                  | V0, HB Flammability  |
| Genders                    | Female, Male         |
| Lock Assist Type           | Lever lock           |
| Mounting Options           | Panel, Bracket       |

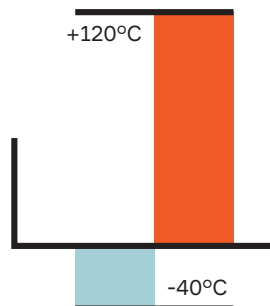


## APPLICATIONS

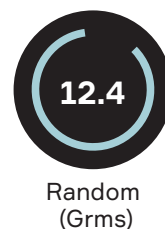
|                    |
|--------------------|
| Chassis            |
| Engine compartment |



## TEMPERATURE



## VIBRATION



## SEALING PROTECTION (IEC, ISO)

IP67,  
IP6K7

Water  
Intrusion

IP69,  
IP6K9K

High Pressure  
Spray

| Cavity count | Blade size (mm)               | Gender | Dimensions W x H x D (mm) | V0 part number | HB part number | Mounting type | Index | Color | Other indexes offered |
|--------------|-------------------------------|--------|---------------------------|----------------|----------------|---------------|-------|-------|-----------------------|
| 15           | 2.8                           | F      | 59.2 x 37.6 x 54.6        | 33276638       | 33188785       | Universal     | A     | Black | B, C                  |
| 21           | 2.8                           | F      | 69.2 x 37.6 x 56.95       | 33276630       | 33101162       | Universal     | A     | Black | B, C, D               |
| 21           | 2.8                           | M      | 68.4 x 46.1 x 84          | 33276634       | 33237993       | Panel         | A     | Black | B, C, D               |
| 26           | 1.5 (12) + 2.8 (12) + 6.3 (2) | F      | 92.15 x 41.4 x 64.71      | 33283998       | 33207220       | Universal     | A     | Black | B, C, D               |
| 26           | 1.5 (12) + 2.8 (12) + 6.3 (2) | M      | 75.9 x 51 x 77.6          | 33284519       | 33207134       | Panel         | A     | Black | B, C, D               |
| 39           | 2.8                           | F      | 120.1 x 44.15 x 64.13     | 33273782       | 33111401       | Universal     | A     | Green | B                     |
| 39           | 2.8                           | M      | 108 x 78 x 89.9           | 33276705       | 33198862       | Panel         | A     | Green | B                     |
| 62           | 1.5 (56) + 2.8 (6)            | F      | 120.55 x 44.1 x 64.55     | 33337581       | 33337577       | Universal     | A     | Black | B, C, D               |
| 62           | 1.5 (56) + 2.8 (6)            | M      | 108 x 78 x 89.9           | 33276719       | 33213199       | Panel         | A     | Black | B, C, D               |

Please, refer to the CTCS catalogue for the full part number list.

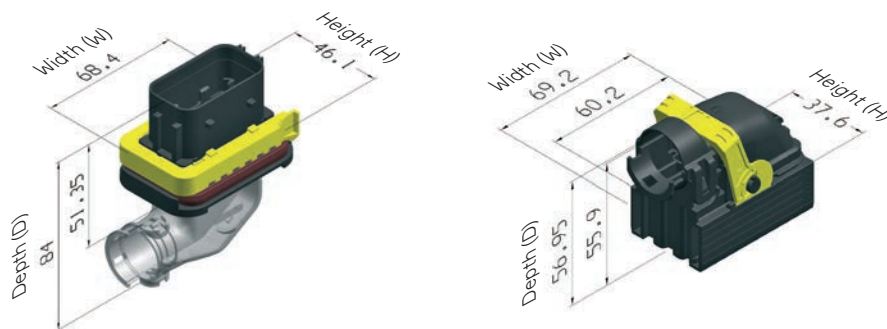


## REQUIRED ACCESSORIES

| Cavity count | Accessory                 | V0 part number | HB part number |
|--------------|---------------------------|----------------|----------------|
| 15           | Female back shell / Lever | 33276642       | 33200044       |
| 21           | Female back shell / Lever | 33276641       | 33106893       |
| 26           | Female back shell / Lever | 33284004       | 33207232       |
| 39           | Female back shell / Lever | 33273779       | 33111591       |
| 62           | Female back shell / Lever | 33273779       | 33111591       |



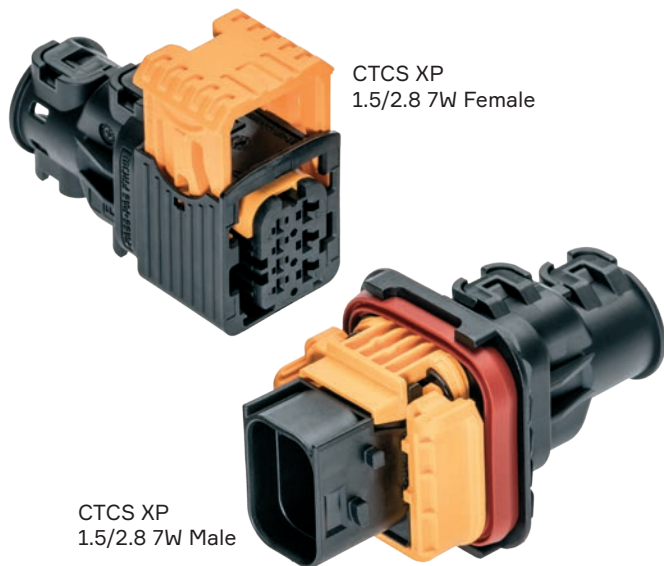
## DIMENSION MEASUREMENT SAMPLE



## COMPATIBLE WITH



# CTCS XP SERIES



## BENEFITS

- Versatile connection system
- Unparalleled reliability and performance
- Designed for the transportation market

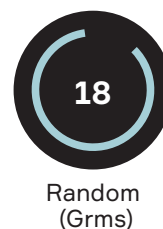
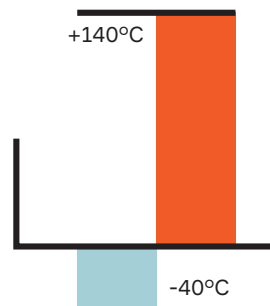
## FEATURES

- Optional back shells in 180° and 90° angles with additional ribbing for improved vibration performance
- 0-gap design of back shells provides superior protection against dust and debris ingress
- Locking features on slides prevent accidental release of connectors prior to full mating

## AVAILABLE CONFIGURATIONS

|                            |                                      |
|----------------------------|--------------------------------------|
| Cavity Count (ways)        | 2, 3, 4, 6, 7, 8, 10, 12, 15, 16, 18 |
| Cavity Configurations (mm) | 1.5, 2.8, 6.3, Mixed                 |
| Materials                  | V0                                   |
| Genders                    | Female, Male                         |
| Lock Assist Type           | Slider lock                          |
| Mounting Options           | Panel, Strap/Clip                    |

## TEMPERATURE VIBRATION



## APPLICATIONS

|                    |
|--------------------|
| Chassis            |
| Engine compartment |
| On-engine          |

## SEALING PROTECTION (IEC, ISO)

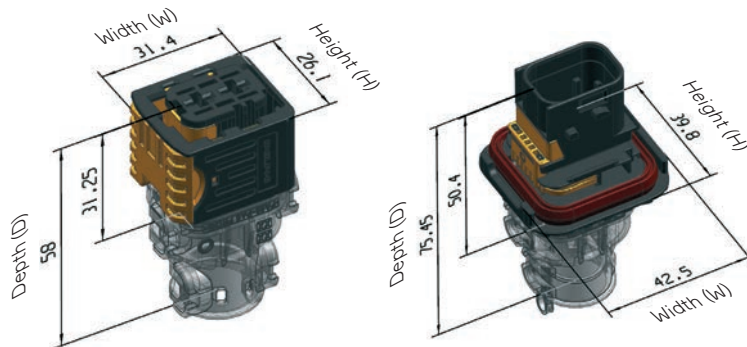


| Cavity count | Blade size (mm)    | Gender | Dimensions W x H x D (mm) | V0 part number | Mounting type | Index | Color | Other indexes offered |
|--------------|--------------------|--------|---------------------------|----------------|---------------|-------|-------|-----------------------|
| 2            | 1.5                | F      | 25.8 x 18.9 x 31.25       | 33253266       | Universal     | A     | Black | B, C, D               |
| 2            | 2.8                | F      | 25.8 x 18.9 x 31.25       | 33253554       | Universal     | A     | Black | B, C, D               |
| 2            | 2.8                | M      | 37.5 x 29.8 x 48.3        | 33254221       | Panel         | A     | Black | B, C, D               |
| 2            | 6.3                | F      | 31.4 x 26.1 x 31.25       | 33285119       | Universal     | A     | Black | B, C, D               |
| 2            | 6.3                | M      | 42.5 x 39.8 x 50.4        | 33285118       | Panel         | A     | Black | B, C, D               |
| 2            | 6.3                | M      | 33.2 x 27 x 50.4          | 33341148       | Strap/Clip    | A     | Black | B, C, D               |
| 3            | 1.5                | F      | 25.8 x 18.9 x 31.25       | 33253275       | Universal     | A     | Black | B, C, D               |
| 3            | 1.5                | M      | 37.5 x 29.8 x 48.3        | 33254285       | Panel         | A     | Black | B, C, D               |
| 3            | 1.5                | M      | 27.6 x 19 x 48.3          | 33254098       | Strap/Clip    | A     | Black | B, C, D               |
| 4            | 2.8                | F      | 30.5 x 26.1 x 31.25       | 33308974       | Universal     | A     | Black | B, C, D               |
| 4            | 2.8                | M      | 37.5 x 39.8 x 48.3        | 33308731       | Panel         | A     | Black | B, C, D               |
| 4            | 2.8                | M      | 27.6 x 27 x 48.3          | 33308978       | Strap/Clip    | A     | Black | B, C, D               |
| 6            | 1.5                | F      | 30.5 x 26.1 x 31.25       | 33308961       | Universal     | A     | Black | B, C, D               |
| 6            | 1.5                | M      | 37.5 x 39.8 x 48.3        | 33308982       | Panel         | A     | Black | B, C, D               |
| 6            | 1.5                | M      | 27.6 x 27 x 48.3          | 33308912       | Strap/Clip    | A     | Black | B, C, D               |
| 7            | 1.5 (4) + 2.8 (3)  | F      | 31.4 x 26.1 x 31.25       | 33285164       | Universal     | A     | Black | B, C, D               |
| 7            | 1.5 (4) + 2.8 (3)  | M      | 42.5 x 39.8 x 48.3        | 33285120       | Panel         | A     | Black | B, C, D               |
| 7            | 1.5 (4) + 2.8 (3)  | M      | 33.2 x 27 x 48.3          | 33341403       | Strap/Clip    | A     | Black | B, C, D               |
| 8            | 1.5                | F      | 31.4 x 26.1 x 31.25       | 33341417       | Universal     | A     | Black | B, C, D               |
| 8            | 1.5                | M      | 42.5 x 39.8 x 48.3        | 33341408       | Panel         | A     | Black | B, C, D               |
| 8            | 1.5                | M      | 33.2 x 27 x 48.3          | 33341413       | Strap/Clip    | A     | Black | B, C, D               |
| 8            | 2.8                | F      | 39.65 x 26.1 x 31.25      | 33343499       | Universal     | A     | Black | B, C, D               |
| 8            | 2.8                | M      | 40.6 x 27 x 48.3          | 35015736       | Strap/Clip    | A     | Black | B, C, D               |
| 10           | 1.5 (6) + 2.8 (4)  | F      | 39.65 x 26.1 x 31.25      | 33344008       | Universal     | A     | Black | B, C, D               |
| 10           | 1.5 (6) + 2.8 (4)  | M      | 50.5 x 39.8 x 48.3        | 33343722       | Panel         | A     | Black | B, C, D               |
| 12           | 1.5                | F      | 39.65 x 26.1 x 31.25      | 33340130       | Universal     | A     | Black | B, C, D               |
| 12           | 1.5                | M      | 50.5 x 39.8 x 48.3        | 33340243       | Panel         | A     | Black | B, C, D               |
| 15           | 1.5 (9) + 2.8 (6)  | F      | 51.5 x 26.1 x 31.25       | 33344005       | Universal     | A     | Black | B, C, D               |
| 15           | 1.5 (9) + 2.8 (6)  | M      | 62.5 x 39.8 x 48.3        | 33343701       | Panel         | A     | Black | B, C, D               |
| 16           | 1.5 (12) + 2.8 (4) | F      | 51.5 x 26.1 x 31.25       | 33285172       | Universal     | A     | Black | B, C, D               |
| 16           | 1.5 (12) + 2.8 (4) | M      | 62.5 x 39.8 x 48.3        | 33285171       | Panel         | A     | Black | B, C, D               |
| 16           | 1.5 (12) + 2.8 (4) | M      | 52.6 x 27 x 48.3          | 33342243       | Strap/Clip    | A     | Black | B, C, D               |
| 18           | 1.5                | F      | 51.5 x 26.1 x 31.25       | 33342277       | Universal     | A     | Black | B, C, D               |
| 18           | 1.5                | M      | 62.5 x 39.8 x 48.3        | 33342293       | Panel         | A     | Black | B, C, D               |
| 18           | 1.5                | M      | 52.6 x 27 x 48.3          | 33342234       | Strap/Clip    | A     | Black | B, C, D               |

Please, refer to the CTCs catalogue for the full part number list.



## DIMENSION MEASUREMENT SAMPLE







# ERGOMATE™ CONNECTORS



# ErgoMate™ 38 WAY



ErgoMate™ 38W  
Connector

## BENEFITS

- Ergonomic mating
- Robust and durable design
- Compact packaging size
- High application versatility

## FEATURES

- Large grasping surface
- High tactile feedback
- Simplified engagement system reduces the possibility of mis-mating of connection system
- Unique geared cam and slider system is fully self-contained, provides a 3:1 mechanical advantage
- A lower-profile ergonomically friendly alternative to traditional lever assist
- Low connector mating force at ~65 N
- Retractable Male Blade Stabilize
- Wide cable guage compatibility from 0.35 mm<sup>2</sup> to 4.0 mm<sup>2</sup>



## AVAILABLE CONFIGURATIONS

|                                        |                                                  |
|----------------------------------------|--------------------------------------------------|
| Cavity Count (ways)                    | 38                                               |
| Cavity Configurations (mm)             | OCS 1.2, CTS 2.8, CTS 6.3                        |
| Genders                                | Female, Male                                     |
| Sealing Type                           | OCS 1.2 Mat Sealed<br>CTS 2.8 & 6.3 Cable Sealed |
| Indexes                                | A, B, C, D                                       |
| Terminal Position Assurance (TPA) Type | ISL                                              |
| Connector Position Assurance (CPA)     | Yes                                              |

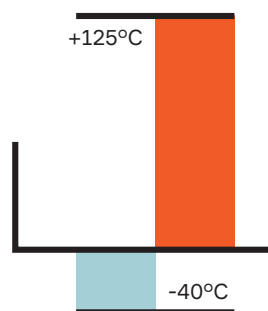


## APPLICATIONS

Passenger Compartment, Trunk, Underhood, Chasis, On Engine, Transmission



## TEMPERATURE



## VIBRATION



## SEALING CLASS



| Cavity count | Blade size (mm)               | Gender | Dimensions W x H x L (mm) | Part number | Index | Color | Other indexes offered |
|--------------|-------------------------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 38           | 1.2 (32) + 2.8 (4) + 6.3 (2)  | F      | 71.25 x 42 x 60           | 35730037    | A     | Black | B, C, D               |
| 38           | 1.2 (32) + 2.8 (4) + 5.8* (2) | M      | 56.25 x 39.2 x 64.5       | 35730043    | A     | Black | B, C, D               |

\* Non Aptiv terminal, please consult us

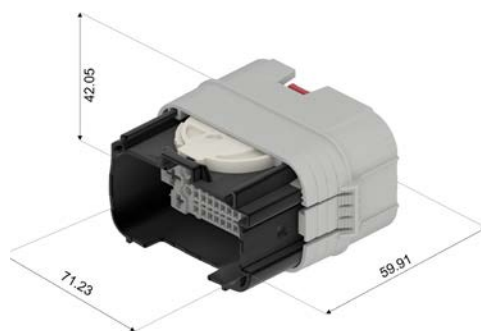


## COMPATIBLE SEALS & ACCESSORIES

| Type        | Applicable Wire Size | Color | Angle | Part number |
|-------------|----------------------|-------|-------|-------------|
| Cavity Plug | 2.8                  | Red   | -     | 12059168    |
| Cavity Plug | 6.3                  | Gray  | -     | 35232480    |
| Back Shell  | 16mm Conduit         | Black | 0°    | 35283288    |
| Back Shell  | 19mm Conduit         | Black | 0°    | 35104748    |
| Back Shell  | 16mm Conduit         | Black | 90°   | 35283609    |
| Back Shell  | 19mm Conduit         | Black | 90°   | 35104749    |



## DIMENSION MEASUREMENT SAMPLE



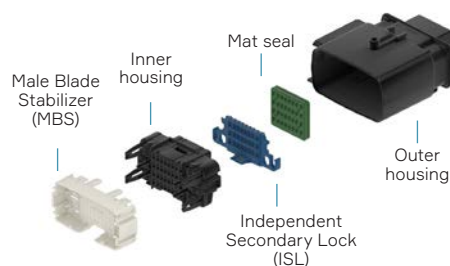
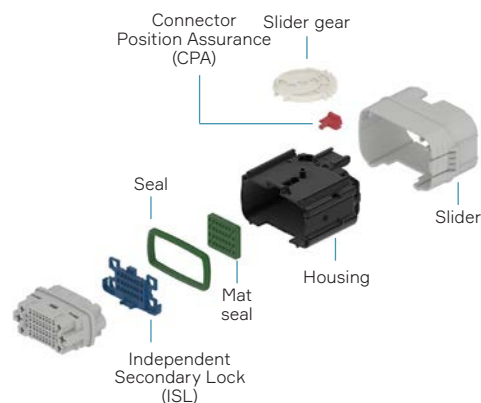
ErgoMate™  
38W Female



ErgoMate™  
38W Male



## EXPLODED VIEW



## COMPATIBLE WITH



# ErgoMate™ 55 WAY



ErgoMate™ 55W  
Female & Male

## BENEFITS

- Ergonomic mating
- Robust and durable design
- Compact packaging size
- High application versatility

## FEATURES

- High reliability one-handed mating
- Large grasping surface
- High tactile feedback
- Simplified engagement system reduces the possibility of mis-mating of connection system
- Unique geared cam and slider system is fully self-contained, provides a 3:1 mechanical advantage
- A lower-profile ergonomically friendly alternative to traditional lever assist
- Low connector mating force at ~65 N
- Wide cable guage compatibility from 0.35 mm<sup>2</sup> to 6.0 mm<sup>2</sup>



## AVAILABLE CONFIGURATIONS

|                            |                                                  |
|----------------------------|--------------------------------------------------|
| Cavity Count (ways)        | 55                                               |
| Cavity Configurations (mm) | OCS 1.2<br>CTS 2.8<br>CTS 6.3                    |
| Genders                    | Female, Male                                     |
| Sealing Type               | OCS 1.2 Mat Sealed<br>CTS 2.8 & 6.3 Cable Sealed |

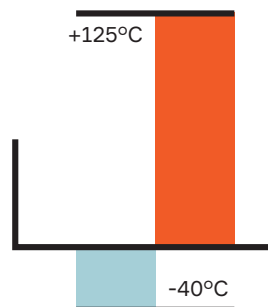


## APPLICATIONS

Sealed inline applications



## TEMPERATURE



## VIBRATION



## SEALING CLASS

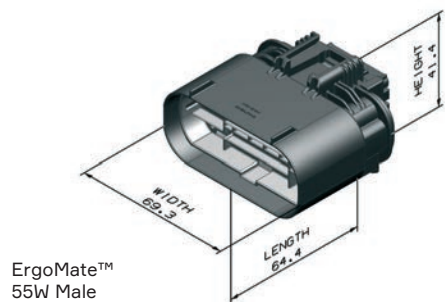
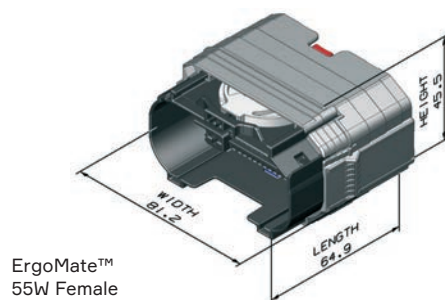


| Cavity count | Blade size (mm)              | Gender | Dimensions W x H x L (mm) | Part number | Index | Color | Other indexes offered |
|--------------|------------------------------|--------|---------------------------|-------------|-------|-------|-----------------------|
| 55           | 1.2 (46) + 2.8 (4) + 6.3 (5) | F      | 81.2 x 45.5 x 64.9        | 35016652    | A     | Black | B                     |
| 55           | 1.2 (46) + 2.8 (4) + 6.3 (5) | M      | 69.3 x 41.4 x 64.4        | 35205173    | A     | Black | B                     |

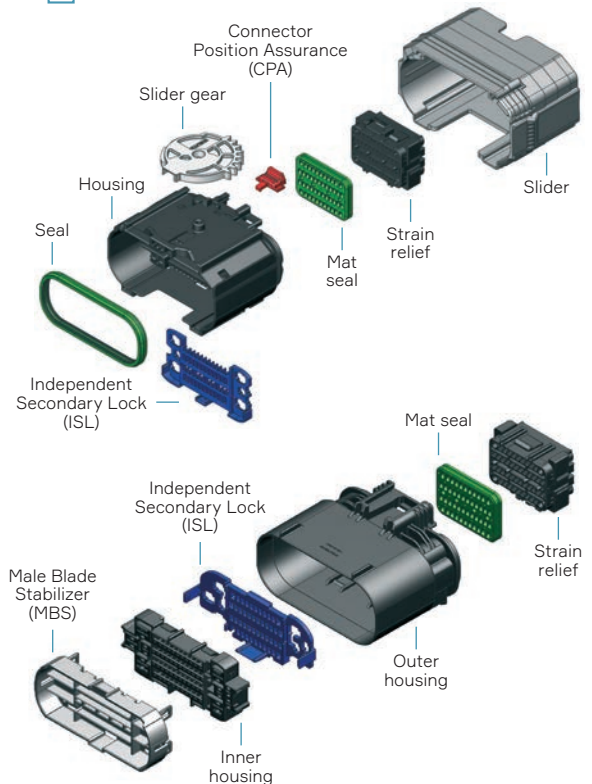
## COMPATIBLE ACCESSORIES

| Type        | Orientation | Color | Part number |
|-------------|-------------|-------|-------------|
| Dress Cover | 90°         | Black | 35017218    |
| Dress Cover | 180°        | Black | 35056875    |

## DIMENSION MEASUREMENT SAMPLE



## EXPLODED VIEW



## COMPATIBLE WITH







# GTS TERMINALS AND CONNECTORS



# GTS 0.64 TERMINALS



GTS 0.64  
Female & Male Terminals

## BENEFITS

- Stable contact force with high performing copper alloy
- Proven reliability in door-to-body connection system

## FEATURES

- Clean body design to go through a mat seal
- Easy and smooth insertion through mat seals



## AVAILABLE CONFIGURATIONS

|                                    |                              |
|------------------------------------|------------------------------|
| Terminal Construction              | Two-piece                    |
| Locking Mechanism                  | Tangless / Lanceless         |
| Crimp Validated to                 | SsangYong, Ferrari, RSA, PSA |
| Blade Size (mm)                    | 0.64                         |
| Wire Gage Range (AWG)              | 22 - 18                      |
| Wire Gage Range (mm <sup>2</sup> ) | 0.22 - 0.85                  |
| Genders                            | Female, Male                 |
| Sealing Options                    | Unsealed, Mat Sealed         |
| Plating Options                    | Sn, Au                       |
| Mating Tab Dimension (mm)          | 0.64 x 0.64                  |



## TECHNICAL CHARACTERISTICS

|                        |         |
|------------------------|---------|
| Contact Resistance     | < 6 mΩ  |
| Contact Mating Force   | < 3 N   |
| Contact Unmating Force | < 0.5 N |
| Mating Cycles          | 20      |
| Cavity Pullout Force   | > 80 N  |
| Center Line Spacing    | 2.5 mm  |



MAX  
TEMP



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



## APPLICATIONS

EMS (Engine Management System)

| Type   | Sealing  | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number |
|--------|----------|--------|---------|-----------------------|------------------------------------|-------------|
| GTS-1* | Unsealed | F      | Sn      | 24 - 22               | 0.22 - 0.35                        | 13955989    |
| GTS-1* | Unsealed | F      | Sn      | 20                    | 0,5                                | 13648598    |
| GTS-1* | Unsealed | F      | Sn      | 18                    | 0.75 - 0.85                        | 13768627    |
| GTS-3  | Unsealed | F      | Sn      | 24 - 22               | 0.22 - 0.35                        | 33500712    |
| GTS-3  | Unsealed | F      | Sn      | 20                    | 0,5                                | 33502051    |
| GTS-3  | Unsealed | F      | Sn      | 18                    | 0.75 - 0.85                        | 33500713    |
| GTS-3  | Unsealed | M      | Sn      | 24 - 22               | 0.22 - 0.35                        | 33510990    |
| GTS-3  | Unsealed | M      | Au      | 24 - 22               | 0.22 - 0.35                        | 33285109    |

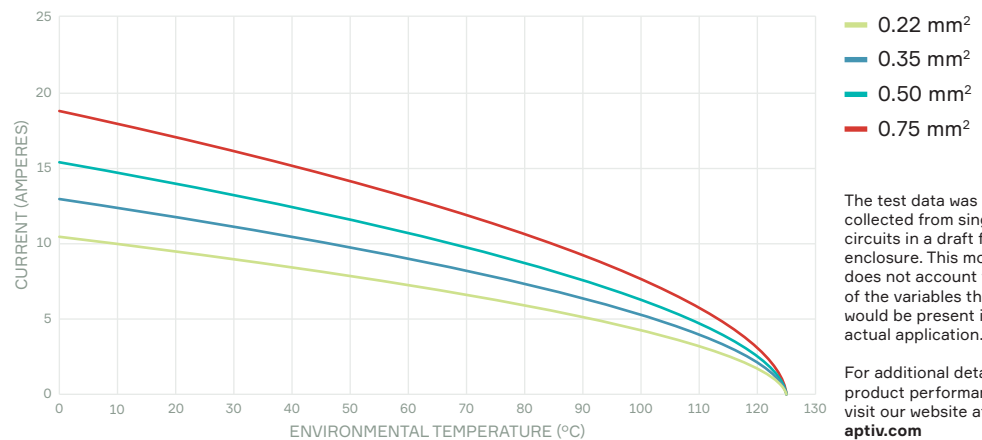
\* CMC application

## DERATING CURVE

Cable range: 0.22 - 0.85 mm<sup>2</sup>  
Crimp method: Standard  
Contact plating: Sn  
Test method: Single circuit in free air\*  
Mated to: GTS 0.64 male terminals 0.22 - 0.35 mm<sup>2</sup>

\* For reference only

One terminal loaded, in housing wire-to-wire configuration



The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](http://aptiv.com)

## COMPATIBLE WITH



# GTS 1.5 TERMINALS



GTS 1.5  
Female & Male Terminals

## BENEFITS

- Stable contact force with high performing copper alloy
- Best ratio of base material usage for a 1.5 mm female terminal in the market
- High vibration performance in 2 and 3 Way housings (up to 42 G at 85 °C)

## FEATURES

- Easy and smooth insertion through mat seals
- Clean Body geometry without any sharp edges, preventing operator injury and wire damage
- Wide range of crimping cable section gauges
- Compatible with cable seals



## AVAILABLE CONFIGURATIONS

|                           |                                    |
|---------------------------|------------------------------------|
| Terminal Construction     | Two-piece                          |
| Locking Mechanism         | Tangless / Lanceless               |
| Crimp Validated to        | RSA, GM, PSA                       |
| Blade Size (mm)           | 1.5                                |
| Wire Gage Range (AWG)     | 24 - 14                            |
| Wire Gage Range (mm²)     | 0.22 - 2.0                         |
| Genders                   | Female, Male                       |
| Sealing Options           | Unsealed, Mat Sealed, Cable Sealed |
| Plating Options           | Sn, Au                             |
| Mating Tab Dimension (mm) | 1.5 x 0.8                          |



## TECHNICAL CHARACTERISTICS

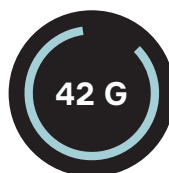
|                        |          |
|------------------------|----------|
| Contact Resistance     | < 1.5 mΩ |
| Contact Mating Force   | < 4 N    |
| Contact Unmating Force | < 0.5 N  |
| Cavity Pullout Force   | > 120 N  |
| Center Line Spacing    | 3.5 mm   |



MAX  
TEMP



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



## APPLICATIONS

Engine compartment, ECU, sensors, actuators

| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Unsealed     | F      | Sn      | 24 - 22               | 0.22 - 0.35                        | 33510898    | Au                       |
| Unsealed     | F      | Sn      | 20 - 18               | 0.50 - 0.85                        | 13648599    | Au                       |
| Unsealed     | F      | Sn      | 16                    | 1.0 - 1.3                          | 13741954    | Au                       |
| Unsealed     | F      | Sn      | 14                    | 1.4 - 2.0                          | 13749482    | Au                       |
| Unsealed     | M      | Sn      | 20 - 18               | 0.50 - 0.85                        | 33510912    | -                        |
| Unsealed     | M      | Sn      | 16                    | 1.0 - 1.3                          | 33500741    | -                        |
| Unsealed     | M      | Sn      | 14                    | 1.4 - 2.0                          | 33510913    | -                        |
| Cable Sealed | F      | Sn      | 20 - 18               | 0.50 - 0.85                        | 29828026    | Au                       |
| Cable Sealed | F      | Sn      | 16                    | 1.0 - 1.3                          | 13860784    | Au                       |
| Cable Sealed | F      | Sn      | 14                    | 1.4 - 2.0                          | 13737773    | Au                       |

## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                                         |        |  |             |
| Cable Seal | 0.35 - 0.75                             | Yellow | Yes                                                                                | 10736278    |
| Cable Seal | 0.5 - 1.0                               | Blue   | Yes                                                                                | 15484426    |
| Cable Seal | 0.75 - 2.0                              | Green  | Yes                                                                                | 10736279    |
| Cable Seal | 1.25 - 1.5                              | Yellow | Yes                                                                                | 13582732    |

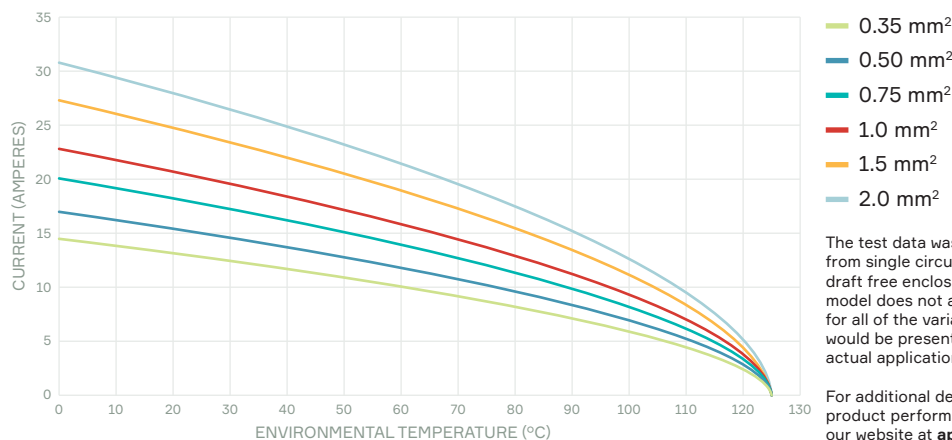
Please, contact an Aptiv representative for the full part number list.

## DERATING CURVE

Cable range: 0.22 - 2.0 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: GTS 1.5 male terminals

\* For reference only

One terminal loaded, in housing wire-to-wire configuration



The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](https://www.aptiv.com)

## COMPATIBLE WITH



# GTS 1.5 SensoMate™ SERIES



GTS SensoMate™ 2W  
Female

## BENEFITS

- Footprint interface compatible with Mini-Sealed Series released by all major OEMs
- Engine and body harsh environment applied to EURO 7 regulations
- Compatible with back shell cover for a convenient guiding of cable bundle

## FEATURES

- Withstanding high vibration up to 42 G sine
- High temperature 150°C (T4), enduring additionally 175°C during 240 hours
- Rear latch for easiness to unmate connector from device
- Connector Position Assurance
- Inertial effect while mating the connector to the device which guarantees an easy mating

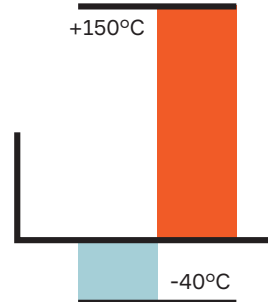


## AVAILABLE CONFIGURATIONS

|                            |            |
|----------------------------|------------|
| Cavity Count (ways)        | 2, 3       |
| Cavity Configurations (mm) | 1.5        |
| Genders                    | Female     |
| Sealing Type               | Mat Sealed |
| Centerline Spacing (mm)    | 3.33       |
| CPA                        | Premounted |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Engine compartment, ECU (electronic control unit), sensors, actuators inline or device



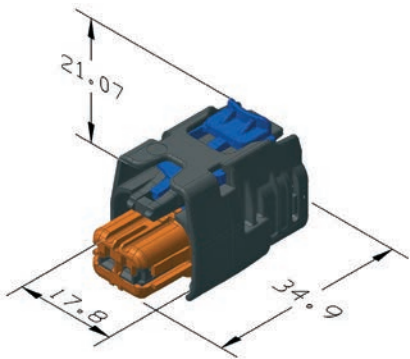
## SEALING PROTECTION

IP68  
IPX9K

| Cavity count | Blade size (mm) | Gender | Dimensions L x W x H (mm) | Part number | Color  | Indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|--------|-----------------|
| 2            | 1.5             | F      | 18 x 21 x 35              | 33150308    | Orange | 8               |
| 3            | 1.5             | F      | 21 x 21 x 35              | 33150316    | Orange | 8               |

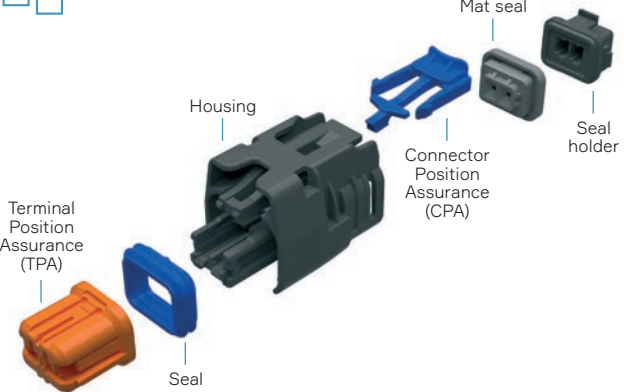


DIMENSION MEASUREMENT SAMPLE





EXPLODED VIEW





COMPATIBLE WITH







# HDK TERMINALS AND CONNECTORS



# HDK FEMALE 1.2 TERMINALS



HDK 1.2 Series Female Terminals

## BENEFITS

- High vibration (up to 50 G) high temperature (up to 150 °C) terminal system
- Unique high contact force terminal system for high vibration load
- Two-piece contact body

## FEATURES

- 4 contact points
- Ultrasonic welding compatible
- High contact pressure by scratching
- Pin motion control



## AVAILABLE CONFIGURATIONS

|                                    |                      |
|------------------------------------|----------------------|
| Terminal Construction              | Two-piece            |
| Locking Mechanism                  | Lanceless / Tangless |
| Crimp Validated to                 | VW 75174-2           |
| Blade Size (mm)                    | 1.2                  |
| Wire Gage Range (mm <sup>2</sup> ) | 0.12 - 1.0           |
| Genders                            | Female               |
| Sealing Options                    | Cable Sealed / SWS*  |
| Plating Options                    | SnAg                 |
| Mating Tab Dimension (mm)          | 1.2 x 0.6            |

\* Single Wire Seal



## TECHNICAL CHARACTERISTICS

|                        |            |
|------------------------|------------|
| Contact Resistance     | < 3 mΩ     |
| Contact Mating Force   | 6 N max    |
| Contact unmating Force | 6 N max    |
| Mating Cycles          | 10 / 25    |
| Cavity Pullout Force   | > 60 N     |
| Center Line Spacing    | 3.5 / 4 mm |



| Sealing      | Gender | Plating | Wire size range (mm <sup>2</sup> ) | Part number |
|--------------|--------|---------|------------------------------------|-------------|
| Cable Sealed | F      | SnAg    | 0.50 - 0.75                        | 33232096    |
| Cable Sealed | F      | SnAg    | 1.0 - 1.5                          | 33232097    |

## COMPATIBLE SEALS

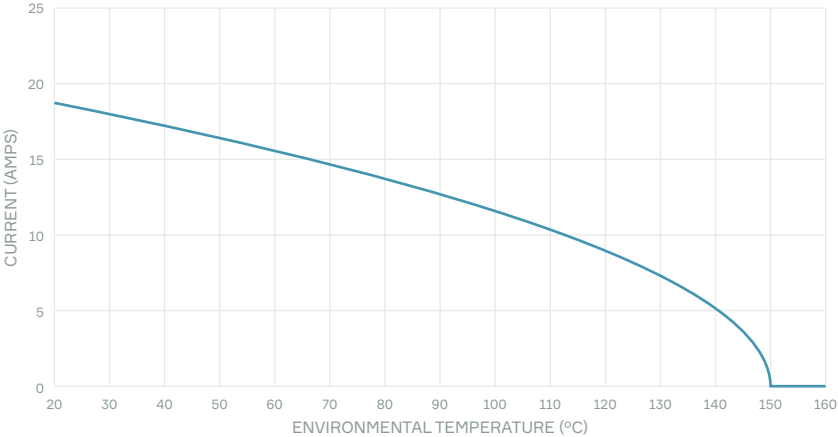
| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                                         |        |  |             |
| Cable Seal | 0.5 - 1.0                               | Green  | Yes                                                                                | 13887350    |
|            |                                         |        |  |             |
| Cable Seal | 0.5 - 1.0                               | Gray   | No                                                                                 | 15327918    |
| Cable Seal | 1.0 - 1.5                               | Yellow | No                                                                                 | 15460621    |

Please, contact an Aptiv representative for the full part number list.

## DERATING CURVES

Cable range: 1.0 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: SnTop  
 Test method: Single circuit  
 in free air\*  
 Mated to: Delphi header

\* For reference only



— 1.0 mm<sup>2</sup>

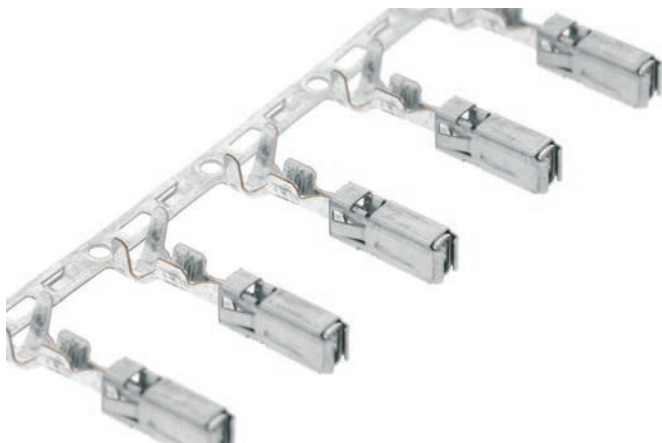
The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](http://aptiv.com)

## COMPATIBLE WITH



# HDK FEMALE 2.8 TERMINALS



HDK 2.8 Series Female Terminals

## BENEFITS

- High vibration (up to 80 G with silver) high temperature (up to 150 °C) terminal system
- Related movements are blocked thanks to the high contact pressure
- Two-piece contact system

## FEATURES

- 4 contact points
- Ultrasonic welding compatible
- High contact pressure



## AVAILABLE CONFIGURATIONS

|                                    |                      |
|------------------------------------|----------------------|
| Terminal Construction              | Two-piece            |
| Locking Mechanism                  | Lanceless / Tangless |
| Crimp Validated to                 | VW 75174-2           |
| Blade Size (mm)                    | 2.8                  |
| Wire Gage Range (mm <sup>2</sup> ) | 0.22 - 2.5           |
| Genders                            | Female               |
| Sealing Options                    | Cable Sealed / SWS*  |
| Plating Options                    | SnAg, Ag             |
| Mating Tab Dimension (mm)          | 2.8 x 0.6            |

\* Single Wire Seal



## TECHNICAL CHARACTERISTICS

|                        |                 |
|------------------------|-----------------|
| Contact Resistance     | < 3 mΩ          |
| Contact Mating Force   | < 20 N / < 35 N |
| Contact Unmating Force | < 20 N / < 32 N |
| Mating Cycles          | 10 / 25         |
| Cavity Pullout Force   | > 80 N          |
| Center Line Spacing    | 5 / 6 mm        |



MAX  
TEMP



MAX  
VIBRATION



Ag



MAX  
CURRENT



with 2.5 mm<sup>2</sup>

| Sealing      | Gender | Plating | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|--------------|--------|---------|------------------------------------|-------------|--------------------------|
| Cable Sealed | F      | SnAg    | 0.22 - 0.35                        | 33515099    | Ag                       |
| Cable Sealed | F      | SnAg    | 0.5 - 1.0                          | 33515098    | Ag                       |
| Cable Sealed | F      | SnAg    | 1.0 - 2.5                          | 33515097    | Ag                       |

## COMPATIBLE SEALS

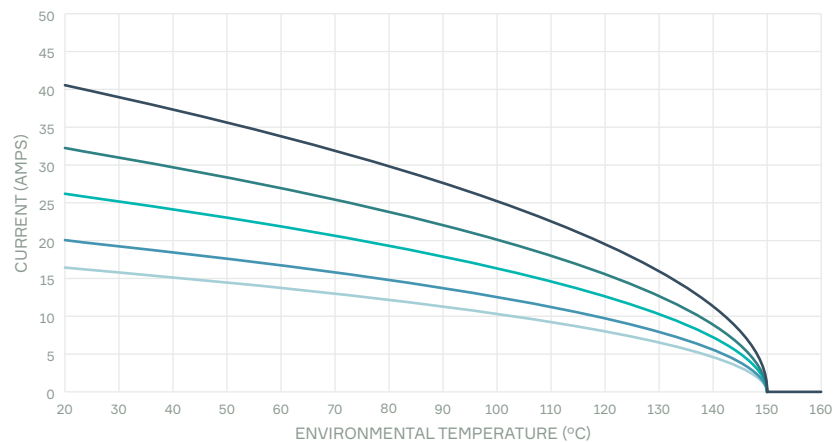
| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                                         |        |  |             |
| Cable Seal | 0.35 - 1.0                              | Blue   | Yes                                                                                | 15339967    |
| Cable Seal | 1.25 - 2.5                              | White  | Yes                                                                                | 15339838    |
|            |                                         |        |  |             |
| Cable Seal | 0.35 - 0.75                             | Blue   | No                                                                                 | 15324974    |
| Cable Seal | 0.5 - 1.0                               | Red    | No                                                                                 | 15327786    |
| Cable Seal | 1.25 - 2.0                              | Red    | No                                                                                 | 15324973    |
| Cable Seal | 2.5                                     | Yellow | No                                                                                 | 10779161    |

Please, contact an Aptiv representative for the full part number list.

## DERATING CURVES

Cable range: 0.35 - 2.5 mm<sup>2</sup>  
Crimp method: Standard  
Contact plating: Ag  
Test method: Single circuit in free air\*  
Mated to: Delphi header

\* For reference only



The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](https://www.aptiv.com)

## COMPATIBLE WITH



# HDK 1.2 SEALED SERIES AK



HDK 1.2 2W  
Female

## BENEFITS

- High performance solution for the AK standard
- Superior connection reliability
- Validated to harsh environment profiles
- AK 1.2 footprint interface (USCAR 120 short shroud)

## FEATURES

- Pre-staged CPA with SLS (Smart Locking System) technology
- Optional strain relief allows to increase performance to 80G and operation in temperatures from -40 up to +140 °C



### AVAILABLE CONFIGURATIONS

|                            |        |
|----------------------------|--------|
| Cavity Count (ways)        | 2      |
| Cavity Configurations (mm) | 1.2    |
| Materials                  | PA66   |
| Genders                    | Female |



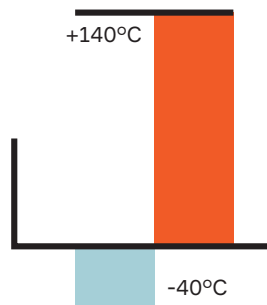
### APPLICATIONS

Engine compartment

On-engine



### TEMPERATURE



### VIBRATION



### SEALING CLASS (DIN 40050-9)



High Pressure  
Spray

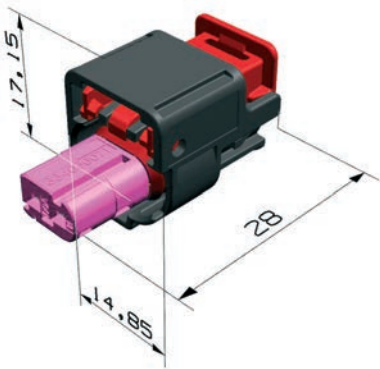
| Cavity count | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Index | Housing color | TPA color |
|--------------|-----------------|--------|---------------------------|-------------|-------|---------------|-----------|
| 2            | 1.2             | F      | 14.8 x 17 x 31.5          | 33405607    | A     | Black         | Violet    |
| 2            | 1.2             | F      | 14.8 x 17 x 31.5          | 33405608    | B     | Black         | Blue      |
| 2            | 1.2             | F      | 14.8 x 17 x 31.5          | 33405609    | C     | Black         | White     |

### COMPATIBLE SEALS

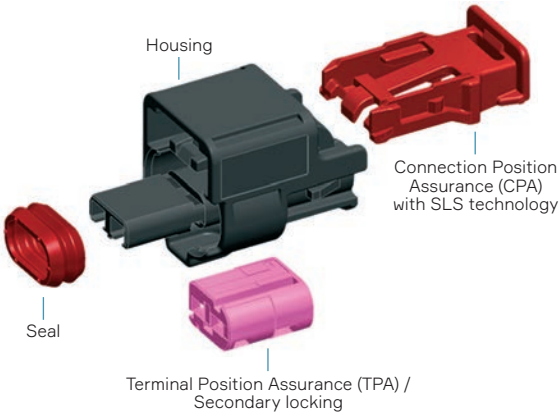
| Type        | Applicable Wire Size (mm²) | Color  | Restraint Ring                                                                     | Part Number |
|-------------|----------------------------|--------|------------------------------------------------------------------------------------|-------------|
|             |                            |        |  |             |
| Cable Seal  | 0.5 - 1.0                  | Green  | Yes                                                                                | 13887350    |
| Cavity Plug | N/A                        | Blue   | Yes                                                                                | 13887353    |
|             |                            |        |  |             |
| Cable Seal  | 0.5 -1.0                   | Gray   | No                                                                                 | 15327918    |
| Cable Seal  | 1.0 - 1.5                  | Yellow | No                                                                                 | 15460621    |
| Cavity Plug | N/A                        | White  | No                                                                                 | 12198198    |

Please, contact an Aptiv representative for the full part number list.

### DIMENSION MEASUREMENT SAMPLE



### EXPLODED VIEW



### COMPATIBLE WITH



# HDK 2.8 SEALED SERIES AK



HDK 2.8 3W  
Female

## BENEFITS

- High performance solution for the AK standard
- Superior connection reliability
- Validated to harsh environment profiles

## FEATURES

- Lateral secondary lock for terminal position assurance
- Mechanical polarization



## AVAILABLE CONFIGURATIONS

|                            |           |
|----------------------------|-----------|
| Cavity Count (ways)        | 2, 3, 4   |
| Cavity Configurations (mm) | 2.8       |
| Materials                  | PBT GF 10 |
| Genders                    | Female    |

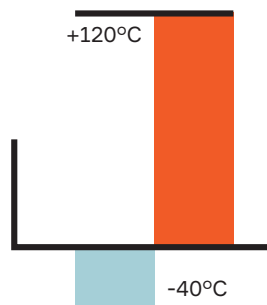


## APPLICATIONS

Engine compartment



## TEMPERATURE



## VIBRATION



## SEALING CLASS (DIN 40050-9)



High Pressure  
Spray

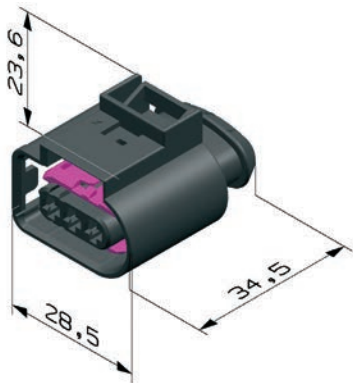
| Cavity count | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Index | Housing color | TPA color |
|--------------|-----------------|--------|---------------------------|-------------|-------|---------------|-----------|
| 2            | 2.8             | F      | 23.6 x 23.5 x 34.5        | 33500745    | A     | Black         | Violet    |
| 2            | 2.8             | F      | 23.6 x 23.5 x 34.5        | 33503772    | B     | Black         | Blue      |
| 2            | 2.8             | F      | 23.6 x 23.5 x 34.5        | 13887338    | C     | Black         | Orange    |
| 3            | 2.8             | F      | 23.6 x 28.5 x 34.5        | 33105660    | A     | Black         | Violet    |
| 3            | 2.8             | F      | 23.6 x 28.5 x 34.5        | 33109024    | B     | Black         | Blue      |
| 3            | 2.8             | F      | 23.6 x 28.5 x 34.5        | 33109332    | C     | Black         | Orange    |
| 4            | 2.8             | F      | 23.7 x 37 x 33            | 13853167    | A     | Black         | Violet    |

## COMPATIBLE SEALS

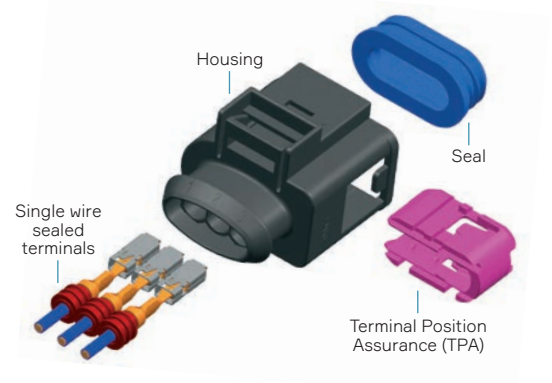
| Type        | Applicable Wire Size (mm²) | Color  | Restraint Ring                                                                     | Part Number |
|-------------|----------------------------|--------|------------------------------------------------------------------------------------|-------------|
|             |                            |        |  |             |
| Cable Seal  | 0.35 - 1.0                 | Blue   | Yes                                                                                | 15339967    |
| Cable Seal  | 1.25 - 2.5                 | White  | Yes                                                                                | 15339838    |
|             |                            |        |  |             |
| Cable Seal  | 0.35 - 0.75                | Blue   | No                                                                                 | 15324974    |
| Cable Seal  | 0.5 - 1.0                  | Red    | No                                                                                 | 15327786    |
| Cable Seal  | 1.25 - 2.0                 | Red    | No                                                                                 | 15324973    |
| Cable Seal  | 2.5                        | Yellow | No                                                                                 | 10779161    |
| Cavity Plug | N/A                        | Green  | No                                                                                 | 10730124    |
| Cavity Plug | N/A                        | Red    | No                                                                                 | 12059168    |

Please, contact an Aptiv representative for the full part number list.

## DIMENSION MEASUREMENT SAMPLE



## EXPLODED VIEW



## COMPATIBLE WITH







# HES CONNECTORS

# HES SERIES



## BENEFITS

- Interchangeable industry mating interface
- Superior environmental protection
- Designed to outperform competition

## FEATURES

- 3-rib seal design provides up to 30% higher performance
- Specialized lock finger design to eliminate terminal unseats
- Forward/backward compatibility
- HES terminals provide improved electrical performance
- Validated to SAE J2030

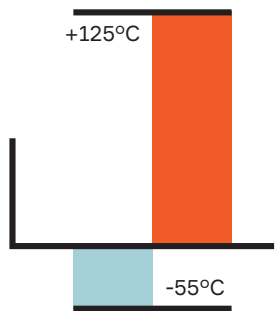


## AVAILABLE CONFIGURATIONS

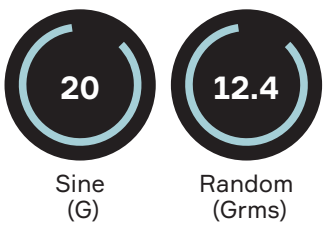
|                            |                        |
|----------------------------|------------------------|
| Cavity Count (ways)        | 19, 21, 23, 29, 31, 47 |
| Cavity Configurations (mm) | 1.0, 1.6, 2.4          |
| Materials                  | PBT, PA66              |
| Genders                    | Female, Male           |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

|                    |
|--------------------|
| Cab                |
| Engine compartment |
| Chassis            |



## ENVIRONMENTAL PROTECTION (IEC, ISO)



Dust Proof



Water Immersion



High Pressure Stream-Jet

| Cavity count | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Configuration | Other configurations |
|--------------|-----------------|--------|---------------------------|-------------|---------------|----------------------|
| 19           | 2.4/1.6         | M      | 47.5 x 50.5 x 45.4        | 15544333    | Thin          | Thick, Reverse       |
| 19           | 2.4/1.6         | F      | 49.4 x 49.4 x 42          | 15544902    | Thin          | Thick, Reverse       |
| 21           | 2.4/1.6         | M      | 47.5 x 50.5 x 45.4        | 15544331    | Thin          | Thick                |
| 21           | 2.4/1.6         | F      | 49.4 x 49.4 x 42          | 15544899    | Thin          | Thick                |
| 23           | 1.6             | M      | 47.5 x 50.5 x 45.4        | 15544329    | Thin          | Thick                |
| 23           | 1.6             | F      | 49.4 x 49.4 x 42          | 15544897    | Thin          | Thick                |
| 29           | 2.4/1.6/1.0     | M      | 47.5 x 50.5 x 45.4        | 15544327    | Thin          | Thick                |
| 29           | 2.4/1.6/1.0     | F      | 49.4 x 49.4 x 42          | 15544895    | Thin          | Thick                |
| 31           | 1.6             | M      | 47.5 x 50.5 x 45.4        | 15544326    | Thin          | Thick, Reverse       |
| 31           | 1.6             | F      | 49.4 x 49.4 x 42          | 15544894    | Thin          | Thick, Reverse       |
| 47           | 1.6/1.0         | M      | 47.5 x 50.5 x 45.4        | 15544324    | Thin          | -                    |
| 47           | 1.6/1.0         | F      | 49.4 x 49.4 x 42          | 15544892    | Thin          | -                    |



## COMPATIBLE ACCESSORIES

| Size    | Accessory        | Part number |
|---------|------------------|-------------|
| 19      | Back Shell 180°  | 13767802    |
| 19      | Back Shell 90°   | 13767805    |
| 22      | Back Shell 180°  | 13767803    |
| 22      | Back Shell 90°   | 13767806    |
| 25      | Back Shell 180°  | 13667839    |
| 25      | Back Shell 90°   | 13667840    |
| 16 & 20 | Cavity seal plug | 13756464    |
| 12      | Cavity seal plug | 13756465    |



## CAVITY CONFIGURATIONS

### 47 Way



5 size 16,  
42 size 20  
Thin Wall (Blue Seal)

### 31 Way



31 size 16  
Thin Wall (Blue Seal)  
Regular and Heavy Wall  
(Orange Seal)

### 29 Way



4 size 12  
19 size 16  
6 size 20  
Thin Wall (Blue Seal)  
Regular and Heavy Wall  
(Orange Seal)

### 23 Way



23 size 16  
Thin Wall (Blue Seal)  
Regular and Heavy Wall  
(Orange Seal)

### 21 Way



4 size 12  
17 size 16  
Thin Wall (Blue Seal)  
Regular and Heavy Wall  
(Orange Seal)

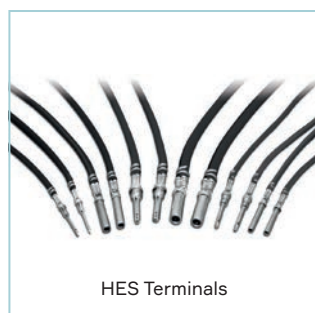
### 19 Way



6 size 12  
13 size 16  
Thin Wall (Blue Seal)  
Regular and Heavy Wall  
(Orange Seal)



## COMPATIBLE WITH





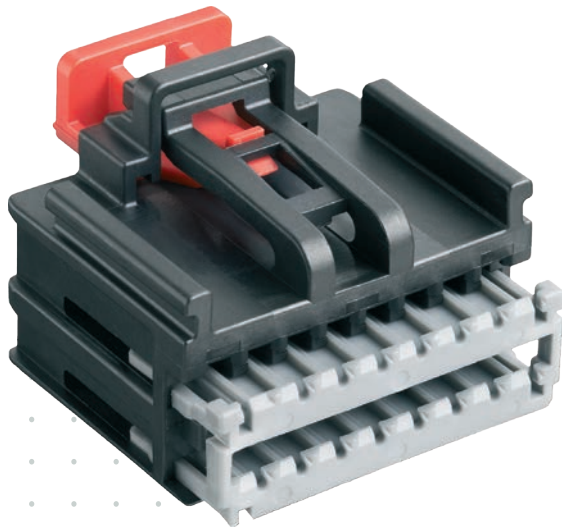


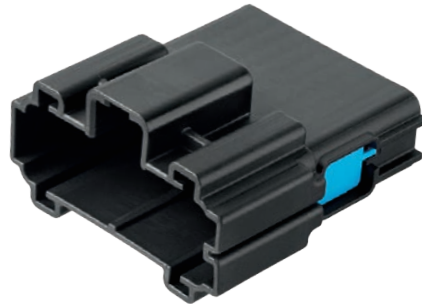
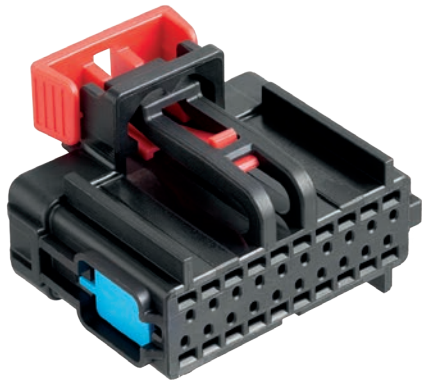
# OCS TERMINALS AND CONNECTORS

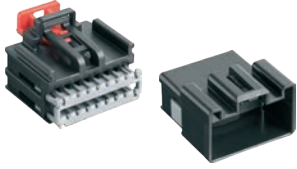


# OCS CONNECTORS SELECTOR GUIDE

Optimal Component Series – OCS offers an industry standard mating interface and family of terminal cavities to enable interchangeability with other compatible systems in the market. The optimized design features provide maximum performance and benefits.



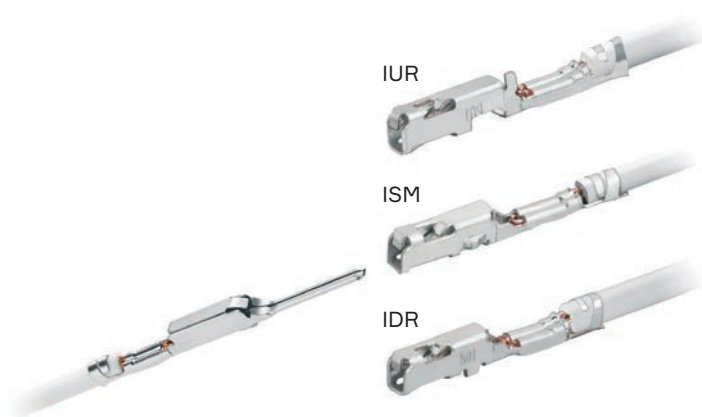


|                   |  |  |  |
|-------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                   | OCS 1.2 Unsealed                                                                   | OCS 1.5 Sealed                                                                      | OCS 1.5 Unsealed                                                                     |
| Application       | Passenger compartment inline applications                                          | Inline applications                                                                 | Inline applications                                                                  |
| Blade Size        | 1.2                                                                                | 1.5                                                                                 | 1.5, 2.8, 6.3, Mixed                                                                 |
| # of Cavities     | 2, 4, 6, 8, 12, 16, 20                                                             | 2, 3, 4, 6, 8, 10, 12, 16                                                           | 2, 3, 4, 6, 8, 10, 12, 16                                                            |
| Gender            | F, M                                                                               | F, M                                                                                | F, M                                                                                 |
| Temperature Class | T2 (+105°C)                                                                        | T3                                                                                  | T2 (+105°C)                                                                          |
| IP Rating         | NA                                                                                 | IP69K                                                                               | IP69K                                                                                |
| CPA               | Optional                                                                           | Optional                                                                            | Optional                                                                             |
| See Pages         | 140-141                                                                            | 142-143                                                                             | 144-145                                                                              |

*This document is non-contractual and is for information purpose only*



# OCS 0.64 TERMINALS



OCS 0.64  
Female & Male Terminals

## BENEFITS

- Cavity compatible with industry standards and/or major OEM cavity preferences
- Wide range of crimp sizes with Aptiv proven crimp technology
- Meets or exceeds major OEM test protocols and requirements
- Contact tongue overstress and nose protection
- High performance copper alloy
- One-piece terminal construction

## FEATURES

- 6+ sigma projected reliability at 150,000 miles (241,401 km)
- Multiple index features available
  - ISM (Index Side Middle) sealed and unsealed applications
  - IUR (Index Up Rear) unsealed applications
  - IDR (Index Down Rear) sealed and unsealed applications
- Up to 18% less material than the competition
- For use in 0.64 applications
- Independent secondary lock compatible

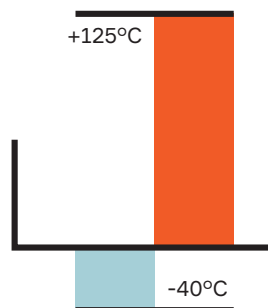


## AVAILABLE CONFIGURATIONS

| Terminal Type         | Box & Blade                  |
|-----------------------|------------------------------|
| Locking Mechanism     | Tangless / Lanceless         |
| Crimp Validated to    | USCAR-21                     |
| Blade Size (mm)       | 0.64                         |
| Wire Gage Range (AWG) | 25 - 18                      |
| Wire Gage Range (mm²) | 0.13 - 0.80                  |
| Genders               | Female, Male                 |
| Sealing Options       | Unsealed, matte/block sealed |
| Plating Options       | Sn, Ag                       |



### TEMPERATURE



### VIBRATION



### MAX CURRENT



with 0.80 mm²



### CONTACT MATING FORCE



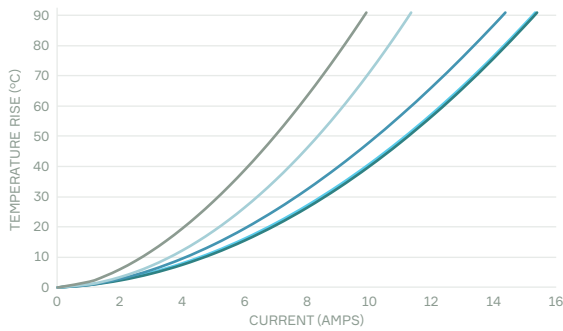
| Index | Sealing               | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|-------|-----------------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| ISM   | Unsealed/Matte Sealed | F      | Sn      | 18                    | 0.75 - 0.80                        | 13726148    | N/A                      |
| ISM   | Unsealed/Matte Sealed | F      | Sn      | 21                    | 0.35 - 0.50                        | 13726147    | N/A                      |
| ISM   | Unsealed/Matte Sealed | F      | Sn      | 25                    | 0.13 - 0.22                        | 13726146    | N/A                      |
| IDR   | Unsealed/Matte Sealed | F      | Sn      | 18                    | 0.75 - 0.80                        | 35088738    | Ag                       |
| IDR   | Unsealed/Matte Sealed | F      | Sn      | 21                    | 0.35 - 0.50                        | 35088739    | Ag                       |
| IDR   | Unsealed/Matte Sealed | F      | Sn      | 25                    | 0.13 - 0.22                        | 35088740    | Ag                       |
| IUR   | Unsealed              | F      | Sn      | 18                    | 0.75 - 0.80                        | 35088745    | Ag                       |
| IUR   | Unsealed              | F      | Sn      | 21                    | 0.35 - 0.50                        | 35088746    | Ag                       |
| IUR   | Unsealed              | F      | Sn      | 25                    | 0.13 - 0.22                        | 35088747    | Ag                       |
|       | Unsealed/Matte Sealed | M      | Sn      | 18                    | 0.75 - 0.8                         | 15504520    | Ag                       |
|       | Unsealed/Matte Sealed | M      | Sn      | 21                    | 0.35 - 0.50                        | 15504521    | Ag                       |
|       | Unsealed/Matte Sealed | M      | Sn      | 25                    | 0.13 - 0.22                        | 15504522    | Ag                       |

Please, contact an Aptiv representative for the full part number list.



## TEMP RISE CURVE

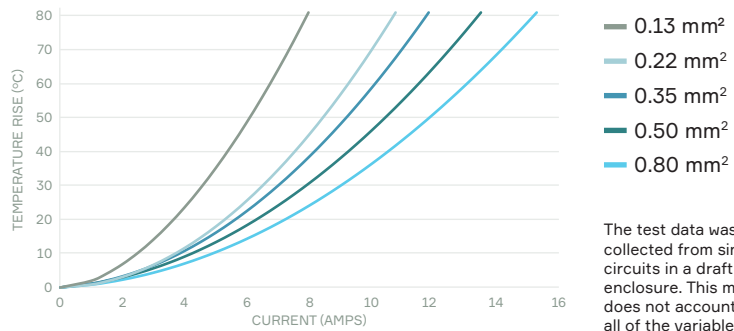
### OCS 0.64 Series ISM Female Terminal



Aptiv taxi: ISM: 13756466  
IDR: Sn - 13887649, Ag - 13919105  
IUR: Sn, Ag - 13767042  
Cable range: 0.13 - 0.80 mm<sup>2</sup>

\* For reference only

### OCS 0.64 Series IDR IUR Female Terminal



Crimp method: Standard  
Contact plating: Sn  
Test method: Single circuit in free air\*  
Mated to: Compliant header

The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](https://www.aptiv.com)



## COMPATIBLE WITH



# OCS 1.2 TERMINALS



OCS 1.2  
Female & Male Terminals

## BENEFITS

- Cavity compatible with industry standards and/or major OEM cavity preferences
- Wide range of crimp sizes with Aptiv proven crimp technology
- Meets or exceeds major OEM test protocols and requirements
- Contact tongue overstress and nose protection
- High performance copper alloy
- One-piece terminal construction

## FEATURES

- 6+ sigma projected reliability at 150,000 miles (241,401 km)
- Robust powertrain contact geometry that is severe vibration capable
- Up to 11% less mass than competing product
- For use in unsealed & mat sealed 1.2 applications
- Independent secondary lock compatible

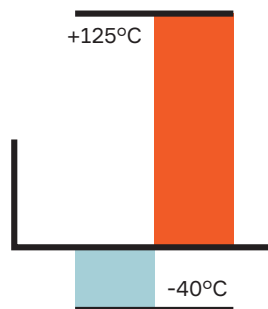


## AVAILABLE CONFIGURATIONS

|                                    |                              |
|------------------------------------|------------------------------|
| Terminal Type                      | Box & Blade                  |
| Locking Mechanism                  | Tangless / Lanceless         |
| Crimp Validated to                 | USCAR-21                     |
| Blade Size (mm)                    | 1.2                          |
| Wire Gage Range (AWG)              | 25 - 15                      |
| Wire Gage Range (mm <sup>2</sup> ) | 0.13 - 1.5                   |
| Genders                            | Female, Male                 |
| Sealing Options                    | Unsealed, matte/block sealed |
| Plating Options                    | Sn, Sn/Ag, Ag, Au/Pd         |



## TEMPERATURE



## VIBRATION



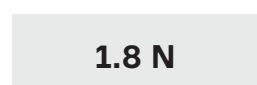
## MAX CURRENT



with 1.5 mm<sup>2</sup>



## CONTACT MATING FORCE



| Sealing               | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings | Other available configurations |
|-----------------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|--------------------------------|
| Unsealed/Matte Sealed | F      | Sn      | 21                    | 0.35 - 0.5                         | 35072391    | Sn/Ag, Ag, Au/Pd         | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 18                    | 0.75 - 0.8                         | 35072392    | Sn/Ag, Ag, Au/Pd         | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 17                    | 0.8 - 1.0                          | 35072393    | Sn/Ag, Ag, Au/Pd         | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 25                    | 0.13 - 0.22                        | 35072402    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 21                    | 0.35 - 0.5                         | 35072403    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 18                    | 0.75 - 0.8                         | 35072404    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 17                    | 0.8 - 1.0                          | 35072405    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 15                    | 1.25 - 1.5                         | 35072406    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 15                    | 1.25 - 1.5                         | 35091060    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 18                    | 0.75 - 1.0                         | 35091061    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 21                    | 0.35 - 0.50                        | 35091062    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 25                    | 0.13 - 0.22                        | 35091063    | Ag                       | N/A                            |

Please, contact an Aptiv representative for the full part number list.

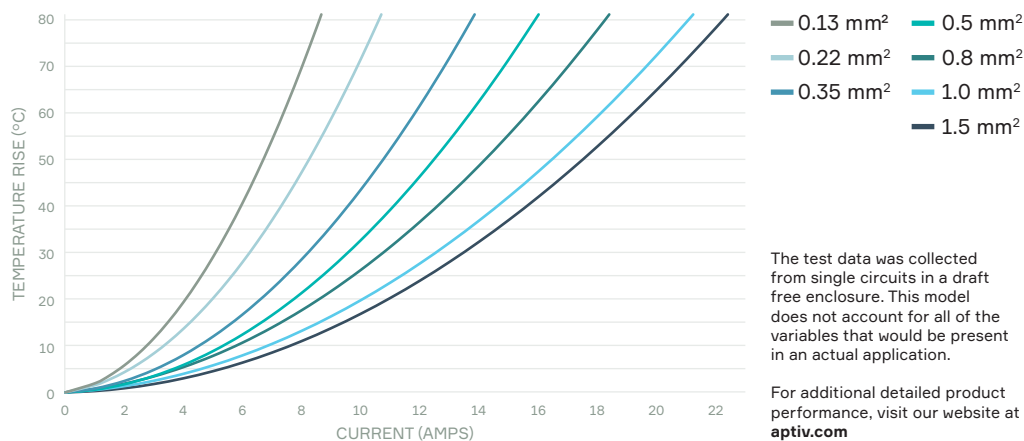


## TEMP RISE CURVE

### OCS 1.2 Series Female Terminal

Aptiv taxi: 13543112  
Cable range: 0.13 - 1.5 mm<sup>2</sup>  
Crimp method: Standard  
Contact plating: CuNiSi  
Test method: Single circuit in free air\*  
Mated to: OCS 1.2 male terminals

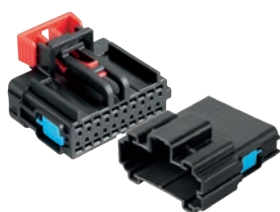
\* For reference only



## COMPATIBLE WITH



OCS 1.2 Sealed Series Housings



OCS 1.2 Unsealed Series Housings

# OCS 1.5 SEALED TERMINALS



OCS 1.5 Sealed  
Female & Male Terminals

## BENEFITS

- Cavity compatible with industry standards and/or major OEM cavity preferences
- Wide range of crimp sizes with Aptiv proven crimp technology
- Meets or exceeds major OEM test protocols and requirements
- Contact tongue overstress and nose protection
- High performance copper alloy
- One-piece terminal construction

## FEATURES

- 6+ sigma projected reliability at 150,000 miles (241,401 km)
- Available in slippery tin plating to minimize terminal engage
- Up to 38% less material than the competition
- For use in 1.5 cable sealed applications

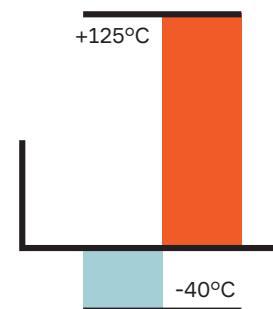


## AVAILABLE CONFIGURATIONS

|                       |                      |
|-----------------------|----------------------|
| Terminal Type         | Box & Blade          |
| Locking Mechanism     | Tangless / Lanceless |
| Crimp Validated to    | USCAR-21             |
| Blade Size (mm)       | 1.5                  |
| Wire Gage Range (AWG) | 21 - 15              |
| Wire Gage Range (mm²) | 0.35 - 1.5           |
| Genders               | Female, Male         |
| Sealing Options       | Cable Sealed         |
| Plating Options       | Sn, Ag               |



## TEMPERATURE



## VIBRATION



## MAX CURRENT



with 1.5 mm²



## CONTACT MATING FORCE

3.5 N

| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings | Other available configurations |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|--------------------------------|
| Cable Sealed | F      | Sn      | 15                    | 1.25 - 1.5                         | 35138798    | Ag                       | N/A                            |
| Cable Sealed | F      | Sn      | 17                    | 0.75 - 1.0                         | 35138799    | Ag                       | N/A                            |
| Cable Sealed | F      | Sn      | 21                    | 0.35 - 0.50                        | 35138800    | Ag                       | N/A                            |
| Cable Sealed | F      | Sn      | 21                    | 0.35 - 0.50                        | 35138801    | Ag                       | N/A                            |
| Cable Sealed | M      | Sn      | 17                    | 0.75 - 1.0                         | 13964786    | Ag                       | N/A                            |
| Cable Sealed | M      | Sn      | 21                    | 0.35 - 0.50                        | 13964785    | Ag                       | N/A                            |
| Cable Sealed | M      | Sn      | 21                    | 0.35 - 0.50                        | 13964784    | Ag                       | N/A                            |

Please, contact an Aptiv representative for the full part number list.

## COMPATIBLE SEALS

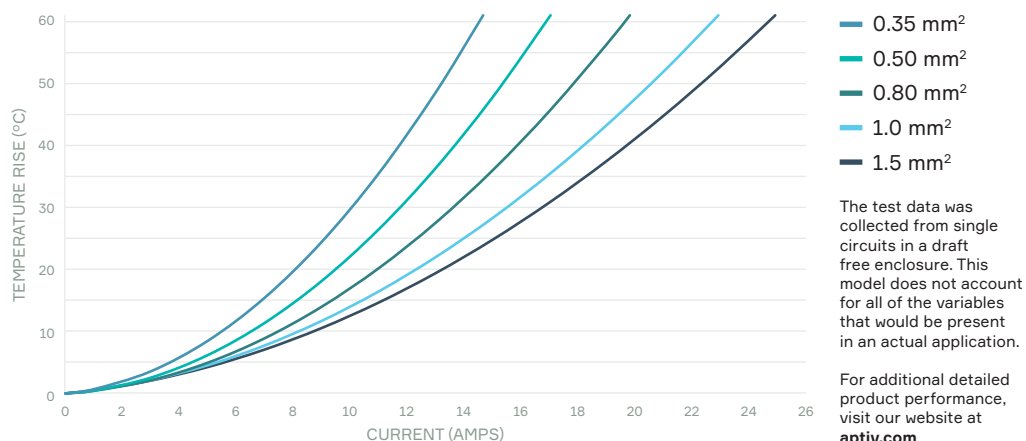
| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|-------|------------------------------------------------------------------------------------|-------------|
|            |                                         |       |  |             |
| Cable Seal | 0.35 - 0.75                             | Red   | Yes                                                                                | 13834630    |
| Cable Seal | 0.75 - 1.5                              | Blue  | Yes                                                                                | 13834623    |
| Cable Seal | 1.5 - 2.0                               | Gray  | Yes                                                                                | 13834614    |

## TEMP RISE CURVE

### OCS 1.5 Sealed Series Female Terminal

Aptiv taxi: 13887280  
Cable range: 0.35 - 1.5 mm<sup>2</sup>  
Crimp method: Standard  
Contact plating: Sn  
Test method: Single circuit in free air\*  
Mated to: OCS 1.5 male terminals

\* For reference only



## COMPATIBLE WITH



# OCS 1.5 UNSEALED TERMINALS



OCS 1.5 Unsealed  
Female & Male Terminals

## BENEFITS

- Cavity compatible with industry standards and/or major OEM cavity preferences
- Wide range of crimp sizes with Aptiv proven crimp technology
- Meets or exceeds major OEM test protocols and requirements
- Contact tongue overstress and nose protection
- High performance copper alloy
- One-piece terminal construction

## FEATURES

- 6+ sigma projected reliability at 150,000 miles (241,401 km)
- Available with LIF contact geometry and slippery tin plating to minimize terminal engage
- Up to 40% less material than the competition
- For use in unsealed & mat sealed 1.5 applications

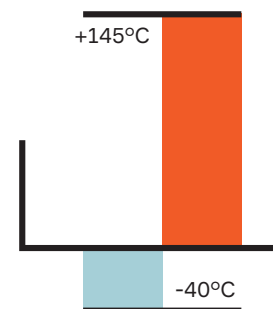


## AVAILABLE CONFIGURATIONS

|                       |                              |
|-----------------------|------------------------------|
| Terminal Type         | Box & Blade                  |
| Locking Mechanism     | Tangless / Lanceless         |
| Crimp Validated to    | USCAR-21                     |
| Blade Size (mm)       | 1.5                          |
| Wire Gage Range (AWG) | 25 - 14                      |
| Wire Gage Range (mm²) | 0.13 - 2.0                   |
| Genders               | Female, Male                 |
| Sealing Options       | Unsealed, matte/block sealed |
| Plating Options       | Sn, Ag                       |



## TEMPERATURE



## VIBRATION



## MAX CURRENT



with 2.0 mm²



## CONTACT MATING FORCE

3.0 N

| Sealing               | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings | Other available configurations |
|-----------------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|--------------------------------|
| Unsealed/Matte Sealed | F      | Sn      | 14                    | 1.5 - 2.0                          | 35031565    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 17                    | 0.75 - 1.0                         | 35031566    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 21                    | 0.35 - 0.50                        | 35031567    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | F      | Sn      | 25                    | 0.13 - 0.22                        | 35031568    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 14                    | 1.5 - 2.0                          | 13964792    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 15                    | 1.25 - 1.5                         | 13964791    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 17                    | 0.75 - 1.0                         | 13964790    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 21                    | 0.35 - 0.50                        | 13964789    | Ag                       | N/A                            |
| Unsealed/Matte Sealed | M      | Sn      | 25                    | 0.13 - 0.22                        | 13964788    | Ag                       | N/A                            |

Please, contact an Aptiv representative for the full part number list.

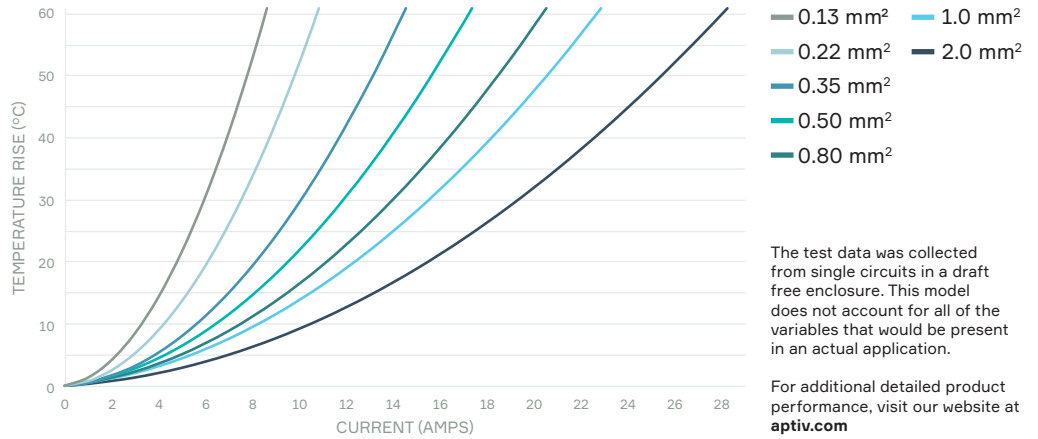


## TEMP RISE CURVE

### OCS 1.5 Unsealed Series Female Terminal

Aptiv taxi: 13849927  
 Cable range: 0.13 - 2.0 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: OCS 1.5 male terminals

\* For reference only



## COMPATIBLE WITH



# OCS 2.8 SEALED TERMINALS



OCS 2.8 Sealed  
Female & Male Terminals

## BENEFITS

- Cavity compatible with industry standards and/or major OEM cavity preferences
- Wide range of crimp sizes with Aptiv proven crimp technology
- Meets or exceeds major OEM test protocols and requirements
- Contact tongue overstress and nose protection
- High performance copper alloy
- One-piece terminal construction

## FEATURES

- 6+ sigma projected reliability at 150,000 miles (241,401 km)
- Patented contact geometry
- Up to 36% less mass than competing product
- For use in 2.8 cable sealed applications

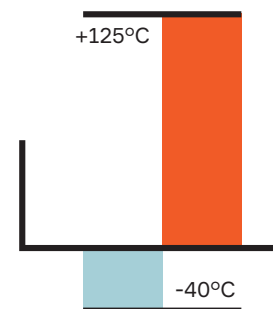


## AVAILABLE CONFIGURATIONS

|                       |                      |
|-----------------------|----------------------|
| Terminal Type         | Box & Blade          |
| Locking Mechanism     | Tangless / Lanceless |
| Crimp Validated to    | USCAR-21             |
| Blade Size (mm)       | 2.8                  |
| Wire Gage Range (AWG) | 21 - 13              |
| Wire Gage Range (mm²) | 0.35 - 3.0           |
| Genders               | Female, Male         |
| Sealing Options       | Cable Sealed         |
| Plating Options       | Sn                   |



## TEMPERATURE



## VIBRATION



## MAX CURRENT



with 3.0 mm²



## CONTACT MATING FORCE

4.0 N

| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings | Other available configurations |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|--------------------------------|
| Cable Sealed | F      | Sn      | 13                    | 2.0 - 3.0                          | 35126209    | N/A                      | N/A                            |
| Cable Sealed | F      | Sn      | 14                    | 1.25 - 2.5                         | 35126211    | N/A                      | N/A                            |
| Cable Sealed | F      | Sn      | 17                    | 0.75 - 1.0                         | 35126212    | N/A                      | N/A                            |
| Cable Sealed | F      | Sn      | 21                    | 0.35 - 0.50                        | 35126213    | N/A                      | N/A                            |
| Cable Sealed | M      | Sn      | 14                    | 2.0 - 2.5                          | 13964777    | N/A                      | N/A                            |
| Cable Sealed | M      | Sn      | 15                    | 1.25 - 1.5                         | 13964776    | N/A                      | N/A                            |
| Cable Sealed | M      | Sn      | 17                    | 0.75 - 1.0                         | 13964775    | N/A                      | N/A                            |
| Cable Sealed | M      | Sn      | 21                    | 0.35 - 0.50                        | 13964774    | N/A                      | N/A                            |

Please, contact an Aptiv representative for the full part number list.

## COMPATIBLE SEALS

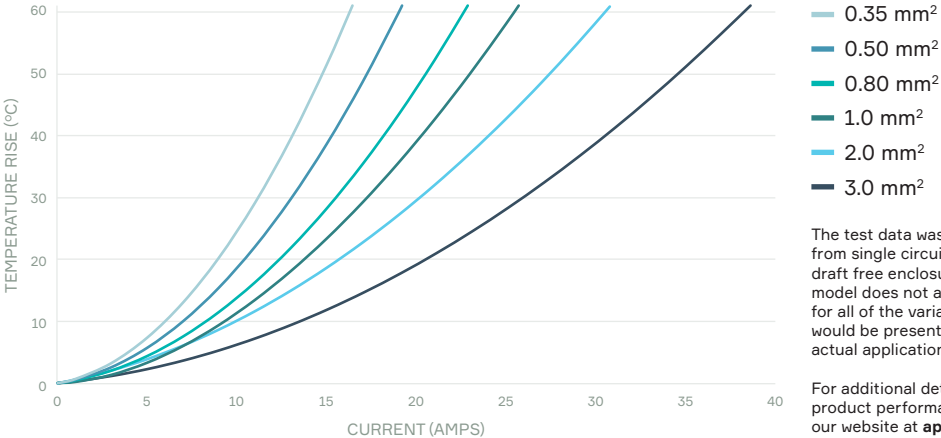
| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|-------|------------------------------------------------------------------------------------|-------------|
|            |                                         |       |  |             |
| Cable Seal | 0.35 - 0.75                             | Green | Yes                                                                                | 13834633    |
| Cable Seal | 1.0 - 2.5                               | Blue  | Yes                                                                                | 35545727    |
| Cable Seal | 2.0 - 4.0                               | Gray  | Yes                                                                                | 35545726    |

## TEMP RISE CURVE

### OCS 2.8 Sealed Series Female Terminal

Aptiv taxi: 13887281  
 Cable range: 0.35 - 3.0 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: OCS 2.8 male terminals

\* For reference only



The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](https://www.aptiv.com)

## COMPATIBLE WITH



# OCS 2.8 UNSEALED TERMINALS

## BENEFITS

- Cavity compatible with industry standards and/or major OEM cavity preferences
- Wide range of crimp sizes with Aptiv proven crimp technology
- Meets or exceeds major OEM test protocols and requirements
- Contact tongue overstress and nose protection
- High performance copper alloy
- One-piece terminal construction

## FEATURES

- 6+ sigma projected reliability at 150,000 miles (241,401 km)
- Patented contact geometry
- Up to 37% less material than the competition
- For use in unsealed 2.8 applications

OCS 2.8 Unsealed  
Female & Male Terminals

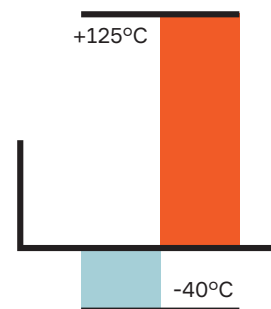


## AVAILABLE CONFIGURATIONS

|                       |                      |
|-----------------------|----------------------|
| Terminal Type         | Box & Blade          |
| Locking Mechanism     | Tangless / Lanceless |
| Crimp Validated to    | USCAR-21             |
| Blade Size (mm)       | 2.8                  |
| Wire Gage Range (AWG) | 25 - 10              |
| Wire Gage Range (mm²) | 0.13 - 5.0           |
| Genders               | Female, Male         |
| Sealing Options       | Unsealed             |
| Plating Options       | Sn                   |



## TEMPERATURE



## VIBRATION



## MAX CURRENT



with 5.0 mm²



## CONTACT MATING FORCE

4.0 N

| Sealing  | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings | Other available configurations |
|----------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|--------------------------------|
| Unsealed | F      | Sn      | 10                    | 4.0 - 5.0                          | 35063083    | N/A                      | N/A                            |
| Unsealed | F      | Sn      | 13                    | 2.0 - 3.0                          | 35063084    | N/A                      | N/A                            |
| Unsealed | F      | Sn      | 14                    | 1.25 - 2.5                         | 35063085    | N/A                      | N/A                            |
| Unsealed | F      | Sn      | 17                    | 0.75 - 1.0                         | 35063086    | N/A                      | N/A                            |
| Unsealed | F      | Sn      | 21                    | 0.30 - 0.60                        | 35063087    | N/A                      | N/A                            |
| Unsealed | F      | Sn      | 25                    | 0.13 - 0.22                        | 35063088    | N/A                      | N/A                            |
| Unsealed | M      | Sn      | 13                    | 2.5 - 3.0                          | 13964783    | N/A                      | N/A                            |
| Unsealed | M      | Sn      | 14                    | 2.0 - 2.5                          | 13964782    | N/A                      | N/A                            |
| Unsealed | M      | Sn      | 15                    | 1.25 - 1.5                         | 13964781    | N/A                      | N/A                            |
| Unsealed | M      | Sn      | 17                    | 0.75 - 1.0                         | 13964780    | N/A                      | N/A                            |
| Unsealed | M      | Sn      | 21                    | 0.35 - 0.50                        | 13964779    | N/A                      | N/A                            |

Please, contact an Aptiv representative for the full part number list.

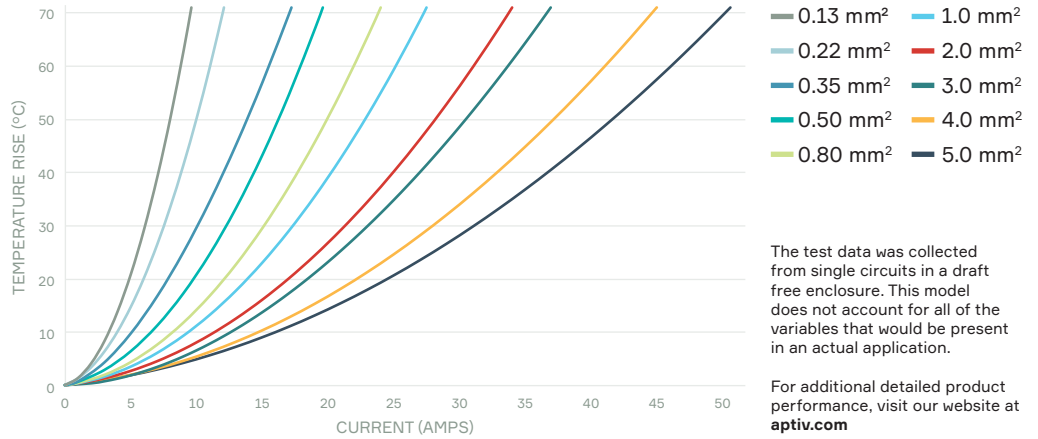


## TEMP RISE CURVE

### OCS 2.8 Unsealed Series Female Terminal

Aptiv taxi: 13819334  
 Cable range: 0.13 - 5.0 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: OCS 2.8 male terminals

\* For reference only



## COMPATIBLE WITH



# OCS 1.2 UNSEALED SERIES



## BENEFITS

- Enhanced connection system warranty performance
- Robust reliability and design-in durability

## FEATURES

- Optimized connector face to prevent terminal stubbing
- Full Locking System (FLS) for superior terminal locking detection and retention
- Outer cavities accept 1.5mm<sup>2</sup> cable for greater flexibility (4-20 way)
- Optional Connector Position Assurance (CPA) for higher reliability

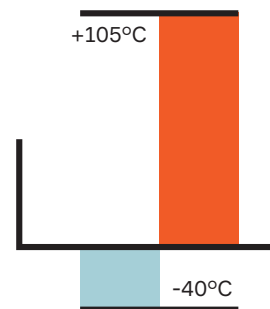


## AVAILABLE CONFIGURATIONS

|                            |                        |
|----------------------------|------------------------|
| Cavity Count (ways)        | 2, 4, 6, 8, 12, 16, 20 |
| Cavity Configurations (mm) | 1.2                    |
| Genders                    | Female, Male           |
| Materials                  | PA, PBT                |
| Mating Type                | Hand-Mate              |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Passenger compartment inline applications



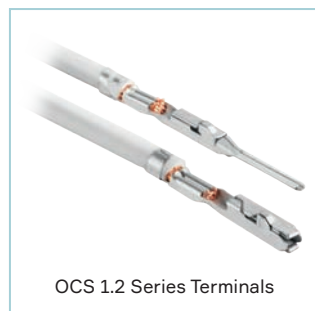
## SEALING CLASS

S1

| Cavity count | Blade size (mm) | Gender | Dimensions W x H x L (mm) | Part number | Index | Color | CPA | Other indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|-------|-------|-----|-----------------------|
| 2            | 1.2             | F      | 23 x 10.53 x 11.14        | 33277559    | A     | Black | Yes | B, C, D               |
| 2            | 1.2             | M      | 35.55 x 14 x 11.93        | 33277549    | A     | Black | Yes | B, C, D               |
| 4            | 1.2             | F      | 30.5 x 18.14 x 20.48      | 33198617    | A     | Black | Yes | B, C, D, E, F         |
| 4            | 1.2             | M      | 38.95 x 18.83 x 21.61     | 33198634    | A     | Black | Yes | B, C, D, E, F         |
| 6            | 1.2             | F      | 30.5 x 23.42 x 20.48      | 33257488    | A     | Black | Yes | B, C, D, E, F         |
| 6            | 1.2             | M      | 38.95 x 24.63 x 20.17     | 33257503    | A     | Black | Yes | B, C, D, E, F         |
| 8            | 1.2             | F      | 30.5 x 17.53 x 23.01      | 33255744    | A     | Black | Yes | B, C, D, E, F         |
| 8            | 1.2             | M      | 38.95 x 19.96 x 24.1      | 33255759    | A     | Black | Yes | B, C, D, E, F         |
| 12           | 1.2             | F      | 30.5 x 23.33 x 23.01      | 33250071    | A     | Black | Yes | B, C, D, E, F         |
| 12           | 1.2             | M      | 38.95 x 25.76 x 22.75     | 33250086    | A     | Black | Yes | B, C, D, E, F         |
| 16           | 1.2             | F      | 30.5 x 29.13 x 23.01      | 33257519    | A     | Black | Yes | B, C, D, E, F         |
| 16           | 1.2             | M      | 38.95 x 31.56 x 22.75     | 33257537    | A     | Black | Yes | B, C, D, E, F         |
| 20           | 1.2             | F      | 30.5 x 34.93 x 23.01      | 33239497    | A     | Black | Yes | B, C, D, E, F         |
| 20           | 1.2             | M      | 38.95 x 37.36 x 22.75     | 33239518    | A     | Black | Yes | B, C, D, E, F         |

Please, contact an Aptiv representative for the full part number list.

## COMPATIBLE WITH



# OCS 1.5 SEALED SERIES

OCS 1.5 Sealed  
Female



OCS 1.5 Sealed  
Male

## BENEFITS

- Compatibility with industry standard mating interfaces
- Robust reliability and designed-in durability
- Enhanced connection system warranty performance

## FEATURES

- Housing lock overstress protection to prevent lock relaxation or damage
- Polyester resins for enhanced audible click for improved operator build feedback and dimensional stability in all seasons
- Optimized Primary Lock Reinforcement (PLR) for improved unseated terminal detection
- Cavity designed with positive forward stop to prevent terminal push through
- Optimized optional Connector Position Assurance (CPA) to provide additional lock performance to ensure connectors stay mated

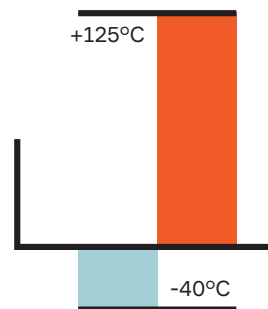


## AVAILABLE CONFIGURATIONS

|                                    |                           |
|------------------------------------|---------------------------|
| Cavity count (ways)                | 2, 3, 4, 6, 8, 10, 12, 16 |
| Genders                            | Female, Male              |
| Indexes                            | 4 USCAR standard, +2      |
| Primary Lock Reinforcement (PLR)   | Yes                       |
| Connector Position Assurance (CPA) | Optional                  |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Inline applications



## SEALING CLASS

S3

| Cavity count    | Blade size (mm) | Gender | Dimensions W x H x L (mm) | Part number | CPA | Index | Color | Other indexes offered |
|-----------------|-----------------|--------|---------------------------|-------------|-----|-------|-------|-----------------------|
| 2               | 1.5             | F      | 36.6 x 20.9 x 24.2        | 15514573    | Y   | A     | Black | B, C, D, E, F         |
| 2               | 1.5             | M      | 56.8 x 17.6 x 18.8        | 15514550    | N   | A     | Black | B, C, D, E, F         |
| 3               | 1.5             | F      | 36.6 x 24.5 x 24.3        | 15514762    | Y   | A     | Black | B, C, D, E, F         |
| 3               | 1.5             | M      | 56.8 x 21.2 x 18.8        | 15514744    | N   | A     | Black | B, C, D, E, F         |
| 4               | 1.5             | F      | 36.6 x 27.9 x 24.1        | 15514524    | Y   | A     | Black | B, C, D, E, F         |
| 4               | 1.5             | M      | 56.8 x 24.6 x 18.8        | 15514500    | N   | A     | Black | B, C, D, E, F         |
| 6               | 1.5             | F      | 36.6 x 24.0 x 27.6        | 15513504    | Y   | A     | Black | B, C, D, E, F         |
| 6               | 1.5             | M      | 56.8 x 20.7 x 22.3        | 15513474    | N   | A     | Black | B, C, D, E, F         |
| 8               | 1.5             | F      | 36.6 x 27.5 x 27.6        | 15514667    | Y   | A     | Black | B, C, D, E, F         |
| 8               | 1.5             | M      | 56.8 x 24.2 x 21.9        | 15514651    | N   | A     | Black | B, C, D, E, F         |
| 10              | 1.5             | F      | 36.6 x 31.0 x 27.6        | 15514821    | Y   | A     | Black | B, C, D, E, F         |
| 10              | 1.5             | M      | 56.8 x 27.7 x 21.9        | 15514807    | N   | A     | Black | B, C, D, E, F         |
| 12              | 1.5             | F      | 36.6 x 34.5 x 27.6        | 15514623    | Y   | A     | Black | B, C, D, E, F         |
| 12              | 1.5             | M      | 56.8 x 31.2 x 21.9        | 15521147    | N   | A     | Black | B, C, D, E, F         |
| 16              | 1.5             | F      | 36.6 x 41.6 x 27.4        | 15514473    | Y   | A     | Black | B, C, D, E, F         |
| 16 <sup>1</sup> | 1.5             | M      | 56.8 x 38.2 x 22.3        | 15521020    | N   | A     | Black | B, C, D, E, F         |
| 16 <sup>2</sup> | 1.5             | M      | 56.8 x 38.2 x 22.3        | 35021687    | N   | A     | Black | B, C, D, E, F         |

<sup>1</sup> with 7 mm clip slot

<sup>2</sup> with 11 mm clip slot

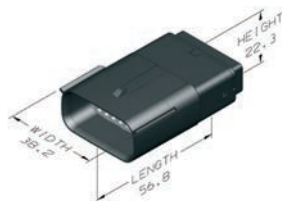
Please, contact an Aptiv representative for the full part number list.



## DIMENSION MEASUREMENT SAMPLE



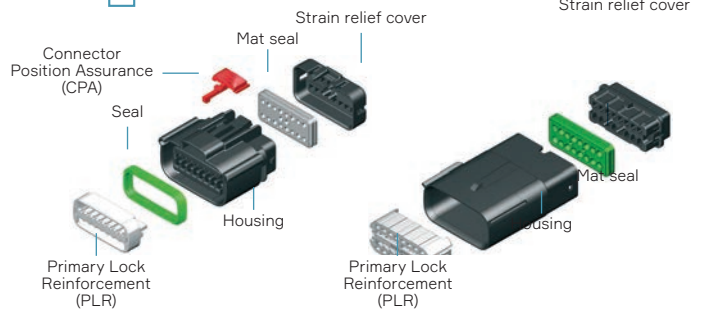
OCS 1.5 Sealed Female



OCS 1.5 Sealed Male



## EXPLODED VIEW



## COMPATIBLE WITH



OCS 1.5 Series Terminals

# OCS 1.5 UNSEALED SERIES

OCS 1.5 Unsealed Female



OCS 1.5 Unsealed Male

## BENEFITS

- Compatibility with industry standard mating interfaces
- Robust reliability and designed-in durability
- Enhanced connection system warranty performance

## FEATURES

- Housing lock overstress protection to prevent lock relaxation or damage
- Polyester resins for enhanced audible click for improved operator build feedback and dimensional stability in all seasons
- Optimized Primary Lock Reinforcement (PLR) for improved unseated terminal detection
- Cavity designed with positive forward stop to prevent terminal push through
- Optimized optional Connector Position Assurance (CPA) to provide additional lock performance to ensure connectors stay mated

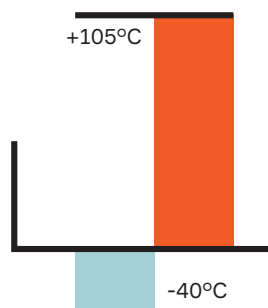


## AVAILABLE CONFIGURATIONS

|                                    |                           |
|------------------------------------|---------------------------|
| Cavity count (ways)                | 2, 3, 4, 6, 8, 10, 12, 16 |
| Genders                            | Female, Male              |
| Indexes                            | 4 USCAR standard, +2      |
| Primary Lock Reinforcement (PLR)   | Yes                       |
| Connector Position Assurance (CPA) | Optional                  |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

Inline applications



## SEALING CLASS

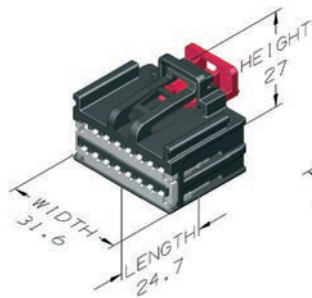


| Cavity count | Blade size (mm) | Gender | Dimensions W x H x L (mm) | Part number | CPA | Index | Color | Other indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|-----|-------|-------|-----------------------|
| 2            | 1.5             | F      | 24.7 x 13.8 x 21.1        | 15509274    | Y   | A     | Black | B, C, D, E, F         |
| 2            | 1.5             | M      | 38.0 x 15.9 x 23.1        | 15509260    | N   | A     | Black | B, C, D, E, F         |
| 3            | 1.5             | F      | 24.7 x 14.2 x 21.1        | 15509304    | Y   | A     | Black | B, C, D, E, F         |
| 3            | 1.5             | M      | 38.0 x 19.4 x 21.3        | 15509290    | N   | A     | Black | B, C, D, E, F         |
| 4            | 1.5             | F      | 24.7 x 17.7 x 21.1        | 15509333    | Y   | A     | Black | B, C, D, E, F         |
| 4            | 1.5             | M      | 38.0 x 22.9 x 21.8        | 15509319    | N   | A     | Black | B, C, D, E, F         |
| 6            | 1.5             | F      | 24.7 x 14.0 x 27.6        | 15512461    | Y   | A     | Black | B, C, D, E, F         |
| 6            | 1.5             | M      | 38.0 x 19.4 x 29.6        | 13968716    | N   | A     | Black | B, C, D, E, F         |
| 8            | 1.5             | F      | 24.7 x 17.5 x 27.6        | 15509366    | Y   | A     | Black | B, C, D, E, F         |
| 8            | 1.5             | M      | 38.0 x 22.4 x 29.6        | 15509351    | N   | A     | Black | B, C, D, E, F         |
| 10           | 1.5             | F      | 24.7 x 21.2 x 27.0        | 15512475    | Y   | A     | Black | B, C, D, E, F         |
| 10           | 1.5             | M      | 38.0 x 24.6 x 26.6        | 13968808    | N   | A     | Black | B, C, D, E, F         |
| 12           | 1.5             | F      | 24.7 x 24.5 x 27.0        | 15512489    | Y   | A     | Black | B, C, D, E, F         |
| 12           | 1.5             | M      | 38.0 x 28.1 x 26.6        | 13968810    | N   | A     | Black | B, C, D, E, F         |
| 16           | 1.5             | F      | 24.7 x 31.6 x 27.0        | 15512506    | Y   | A     | Black | B, C, D, E, F         |
| 16           | 1.5             | M      | 38.0 x 35.1 x 26.6        | 13968813    | N   | A     | Black | B, C, D, E, F         |

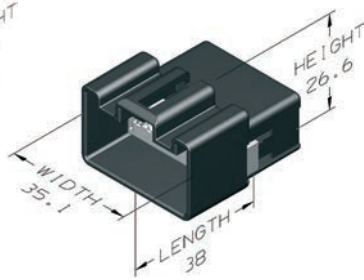
Please, contact an Aptiv representative for the full part number list.



## DIMENSION MEASUREMENT SAMPLE



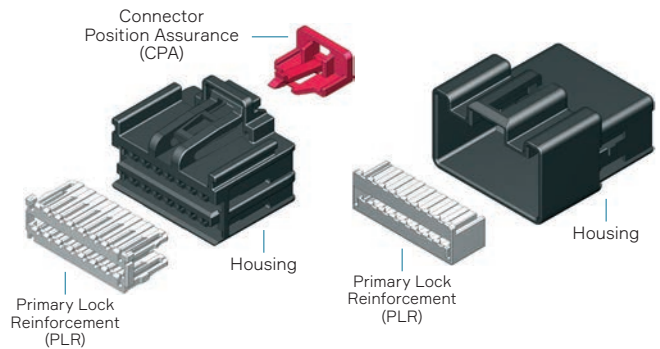
OCS 1.5 Unsealed Female



OCS 1.5 Unsealed Male



## EXPLODED VIEW



## COMPATIBLE WITH



OCS 1.5 Series Terminals





# SICMA TERMINALS, CONNECTORS AND HEADERS

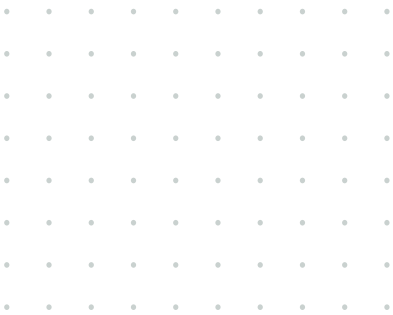




# SICMA CONNECTORS SELECTOR GUIDE

Versatile family of housings and one piece terminals that can be used throughout the vehicle.  
A comprehensive product portfolio for full interconnect system.  
SICMA is our high performance solution with superior compatibility in the industry.

- Heavy-duty performance
- Easy assembly
- High compatibility



|                   |  |  |  |  |  |
|-------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Product Series    | SICMA Inline Sealed                                                               | SICMA Inline Unsealed                                                             | SICMA Mini-Sealed                                                                   | SICMA Panel-Through Sealed                                                          | SICMA Panel-Through Unsealed                                                        |
| Application       | Exterior, chassis, engine compartment, inline, female mated to device             | Inline, interior, cockpit                                                         | Body and Chassis, Engine compartment                                                | Door-to-body connection, EV to battery control                                      | Door-to-body                                                                        |
| Blade Size        | 1.5, 2.8                                                                          | 1.5, 2.8                                                                          | 1.5, 2.8                                                                            | 0.64, 1.5, 2.8                                                                      | 0.64, 1.5, 2.8                                                                      |
| # of Cavities     | 6, 8, 24                                                                          | 10, 24, 36                                                                        | 2, 3, 4, 6, 6 Mixed                                                                 | 14, 16, 24, 26, 33, 34, 50                                                          | 24, 29, 42                                                                          |
| Gender            | F, M                                                                              | F, M                                                                              | F, M                                                                                | F, M                                                                                | F, M                                                                                |
| Temperature Class | T3                                                                                | T1 (24, 36 W)<br>T3 (10 W)                                                        | T3                                                                                  | T3                                                                                  | T3                                                                                  |
| IP Rating         | IP68 (6, 8 W)<br>IP67 (24 W)                                                      | NA                                                                                | IP68, IPX9K                                                                         | IP67 (14, 16, 24, 26, 33, 34 Way)<br>IP64 (50 W)                                    | NA                                                                                  |
| CPA               | No                                                                                | No                                                                                | Optional for 2 W                                                                    | No                                                                                  | No                                                                                  |
| See Pages         | 156-157                                                                           | 158-159                                                                           | 160-161                                                                             | 162-163                                                                             | 164-165                                                                             |

*This document is non-contractual and is for information purpose only*





|                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  |  |  |  |
| <b>SICMA SensoMate™</b>                                                           | <b>SICMA Sealed Relays</b>                                                        | <b>SICMA OBD</b>                                                                  | <b>SICMA Headers Interconnect</b>                                                 |
| Sensors, actuators on engine mount                                                | Engine compartment                                                                | Cockpit                                                                           | Engine compartment, Body                                                          |
| 1.5                                                                               | 2.8, 8.0                                                                          | 1.5                                                                               | 1.5, 2.8, Mixed                                                                   |
| 4, 5, 6                                                                           | 8                                                                                 | 16                                                                                | 6, 24, 56, 90                                                                     |
| F, M                                                                              | F                                                                                 | F                                                                                 | F, Header                                                                         |
| T4                                                                                | T3                                                                                | T2                                                                                | T3                                                                                |
| IP68, IPX9K                                                                       | IP68, IPX9K                                                                       | NA                                                                                | IP68, IPX9K                                                                       |
| Pre-mounted                                                                       | No                                                                                | No                                                                                | No                                                                                |
| 166-167                                                                           | 168-169                                                                           | 170-171                                                                           | 172-173                                                                           |



# SICMA 0.64 TERMINALS



SICMA 0.64  
Female & Male Terminals

## BENEFITS

- Optimized design to keep stable contact pressure
- Standard terminal cavity compatibility

## FEATURES

- Clean body design, preventing tearing of mat seal
- One-piece construction with high pressure contact
- Two crimping gauges for strong slow motion and vibration performance



## AVAILABLE CONFIGURATIONS

|                           |                      |
|---------------------------|----------------------|
| Terminal Construction     | One-piece            |
| Locking Mechanism         | Tangless / Lanceless |
| Crimp Validated to        | RSA                  |
| Blade Size (mm)           | 0.64                 |
| Wire Gage Range (AWG)     | 24 - 20              |
| Wire Gage Range (mm²)     | 0.22 - 0.75          |
| Genders                   | Female, Male         |
| Sealing Options           | Unsealed, Mat Sealed |
| Plating Options           | Sn, Au               |
| Mating Tab Dimension (mm) | 0.64 x 0.9           |



## TECHNICAL CHARACTERISTICS

|                        |         |
|------------------------|---------|
| Contact Resistance     | < 6 mΩ  |
| Contact Mating Force   | < 3 N   |
| Contact Unmating Force | > 0.8 N |
| Mating Cycles          | 10      |
| Cavity Pullout Force   | > 80 N  |
| Center Line Spacing    | 2.5 mm  |

MAX  
TEMP



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



| Sealing  | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|----------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Unsealed | F      | Sn      | 24 - 20               | 0.22 - 0.5                         | 33504063    | Au                       |
| Unsealed | F      | Sn      | 22 - 18               | 0.35 - 0.75                        | 10811966    | Au                       |
| Unsealed | M      | Sn      | 24 - 20               | 0.22 - 0.5                         | 10811967    | Au                       |
| Unsealed | M      | Sn      | 22 - 18               | 0.35 - 0.75                        | 10819388    | Au                       |

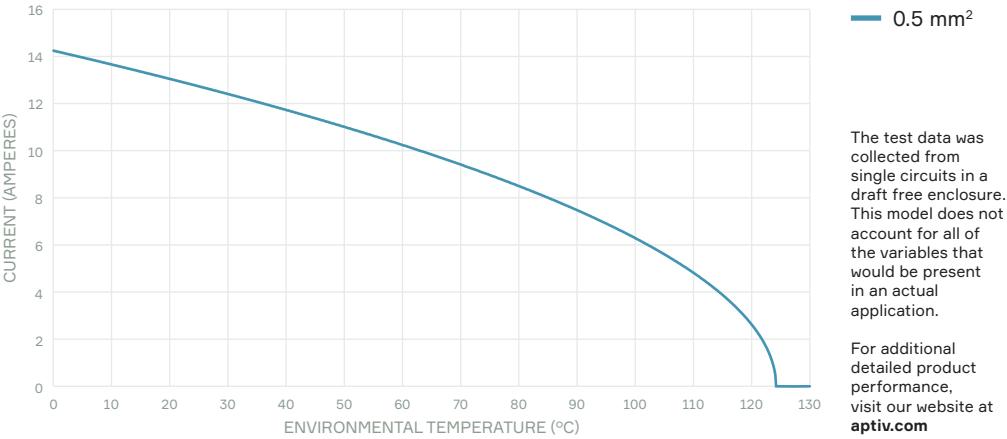


## DERATING CURVE

Cable range:  
Crimp method:  
Contact plating:  
Test method:  
  
Mated to:

0.22 - 0.75 mm<sup>2</sup>  
Standard  
Sn  
Single circuit  
in free air\*  
MicroSICMA  
Male Tab

\* For reference only





## COMPATIBLE WITH



# SICMA 1.5 TERMINALS



SICMA 1.5  
Female & Male Terminals

## BENEFITS

- Optimized design to keep stable contact pressure
- Standard terminal cavity compatibility

## FEATURES

- Clean body design, preventing tearing of mat seal
- One-piece construction with high pressure contact
- Several crimping gauges for strong slow motion and vibration performance



## AVAILABLE CONFIGURATIONS

|                                    |                                    |
|------------------------------------|------------------------------------|
| Terminal Construction              | One-piece                          |
| Locking Mechanism                  | Tangless / Lanceless               |
| Crimp Validated to                 | PSA, RN, FCA, GM, Ford, Volvo      |
| Blade Size (mm)                    | 1.5                                |
| Wire Gage Range (AWG)              | 26 - 14                            |
| Wire Gage Range (mm <sup>2</sup> ) | 0.13 - 2.0                         |
| Genders                            | Female, Male                       |
| Sealing Options                    | Unsealed, Mat Sealed, Cable Sealed |
| Plating Options                    | Sn, Au, Ag (only for Male)         |
| Mating Tab Dimension (mm)          | 1.5 x 0.8                          |



## TECHNICAL CHARACTERISTICS

|                        |                                        |
|------------------------|----------------------------------------|
| Contact Resistance     | < 4 mΩ                                 |
| Contact Mating Force   | < 4 N                                  |
| Contact Unmating Force | > 0.8 N                                |
| Mating Cycles          | 10 / 20 (Au)                           |
| Cavity Pullout Force   | 120 N                                  |
| Center Line Spacing    | 3.33 mm (Unsealed)<br>4.25 mm (Sealed) |



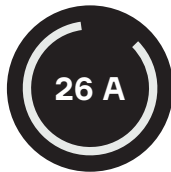
MAX  
TEMP



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Unsealed     | F      | Sn      | 26 - 24               | 0.13 - 0.22                        | 33308333    | Au                       |
| Unsealed     | F      | Sn      | 24                    | 0.22                               | 13625048    | Au                       |
| Unsealed     | F      | Sn      | 22 - 18               | 0.35 - 0.70                        | 10863984    | Au                       |
| Unsealed     | F      | Sn      | 18 - 16               | 0.75 - 1.30                        | 10865152    | Au                       |
| Unsealed     | F      | Sn      | 16 - 14               | 1.35 - 2.0                         | 10863985    | Au                       |
| Unsealed     | M      | Sn      | 26 - 24               | 0.13 - 0.22                        | 33400435    | Ag                       |
| Unsealed     | M      | Sn      | 22 - 18               | 0.35 - 0.70                        | 33501792    | Au, Ag                   |
| Unsealed     | M      | Sn      | 18 - 16               | 0.75 - 1.30                        | 33512109    | Ag                       |
| Unsealed     | M      | Sn      | 16 - 14               | 1.35 - 2.0                         | 33512190    | Ag                       |
| Cable Sealed | F      | Sn      | 22 - 18               | 0.35 - 0.70                        | 13761154    | Au                       |
| Cable Sealed | F      | Sn      | 18 - 16               | 0.75 - 1.30                        | 13761651    | Au                       |
| Cable Sealed | F      | Sn      | 16 - 14               | 1.35 - 2.0                         | 13761648    | Au                       |
| Cable Sealed | M      | Sn      | 22 - 18               | 0.35 - 0.70                        | 35174381    | Ag                       |
| Cable Sealed | M      | Sn      | 18 - 16               | 0.75 - 1.30                        | 35174382    | Ag                       |
| Cable Sealed | M      | Sn      | 16 - 14               | 1.35 - 2.0                         | 35174383    | Ag                       |

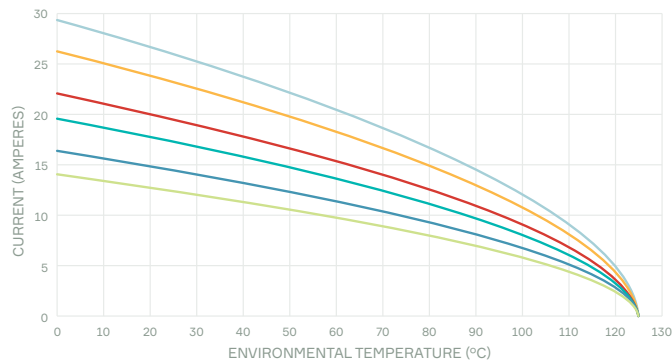
## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color  | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|--------|------------------------------------------------------------------------------------|-------------|
|            |                                         |        |  |             |
| Cable Seal | 0.35 - 0.75                             | Yellow | Yes                                                                                | 10736278    |
| Cable Seal | 0.75 - 2.0                              | Green  | Yes                                                                                | 10736279    |

## DERATING CURVE

Cable range: 0.35 - 2.0 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: SICMA Male Tab

\* For reference only



The test data was collected from single circuits in a draft free enclosure. This model does not account for all of the variables that would be present in an actual application.

For additional detailed product performance, visit our website at [aptiv.com](http://aptiv.com)

## COMPATIBLE WITH SICMA HOUSINGS

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |  |
| SICMA Inline Sealed Series                                                          | SICMA Inline Unsealed Series                                                        | SICMA Headers Interconnect Sealed Series                                            | SICMA Mini-Sealed Series                                                            | SICMA Panel-Through Sealed Series                                                   | SICMA Panel-Through Unsealed Series                                                  | SICMA SensoMate™ Series                                                               | On-Board Diagnostic (OBD) Series                                                      |

# SICMA 2.8 TERMINALS



SICMA 2.8  
Female & Male Terminals

## BENEFITS

- Optimized design to keep stable contact pressure
- Standard terminal cavity compatibility

## FEATURES

- Clean body design, preventing tearing of mat seal
- One-piece construction with high pressure contact
- Several crimping gauges for strong slow motion and vibration performance



## AVAILABLE CONFIGURATIONS

|                           |                                    |
|---------------------------|------------------------------------|
| Terminal Construction     | One-piece                          |
| Locking Mechanism         | Tangless / Lanceless               |
| Crimp Validated to        | RSA, PSA, Ford, Hyundai, GM        |
| Blade Size (mm)           | 2.8                                |
| Wire Gage Range (AWG)     | 22 - 14                            |
| Wire Gage Range (mm²)     | 0.35 - 2.5                         |
| Genders                   | Female, Male                       |
| Sealing Options           | Unsealed, Mat Sealed, Cable Sealed |
| Plating Options           | Sn, SnAg, Au                       |
| Mating Tab Dimension (mm) | 2.8 x 0.8                          |



## TECHNICAL CHARACTERISTICS

|                        |         |
|------------------------|---------|
| Contact Resistance     | < 3 mΩ  |
| Contact Mating Force   | < 6 N   |
| Contact Unmating Force | > 1.5 N |
| Mating Cycles          | 10      |
| Cavity Pullout Force   | 120 N   |
| Center Line Spacing    | 5 mm    |



MAX  
TEMP



MAX  
VIBRATION



MAX CURRENT  
AT 23°C



| Sealing      | Gender | Plating | Wire size range (AWG) | Wire size range (mm <sup>2</sup> ) | Part number | Other available platings |
|--------------|--------|---------|-----------------------|------------------------------------|-------------|--------------------------|
| Unsealed     | F      | Sn      | 22 - 18               | 0.35 - 0.70                        | 10781041    | SnAg, Au                 |
| Unsealed     | F      | Sn      | 18 - 16               | 0.75 - 1.30                        | 15522621    | SnAg, Au                 |
| Unsealed     | F      | Sn      | 16 - 12               | 1.35 - 2.5                         | 10725649    | SnAg, Au                 |
| Unsealed     | M      | Sn      | 22 - 18               | 0.35 - 0.75                        | 10779316    | -                        |
| Unsealed     | M      | Sn      | 18 - 12               | 1.0 - 2.5                          | 10756743    | -                        |
| Cable Sealed | F      | Sn      | 22 - 18               | 0.35 - 0.70                        | 10740375    | -                        |
| Cable Sealed | F      | Sn      | 18 - 16               | 0.75 - 1.30                        | 13873373    | -                        |
| Cable Sealed | F      | Sn      | 16 - 12               | 1.35 - 2.5                         | 10740376    | -                        |
| Cable Sealed | M      | Sn      | 22 - 18               | 0.35 - 0.75                        | 10781143    | -                        |
| Cable Sealed | M      | Sn      | 18 - 12               | 1.0 - 2.5                          | 10793682    | -                        |

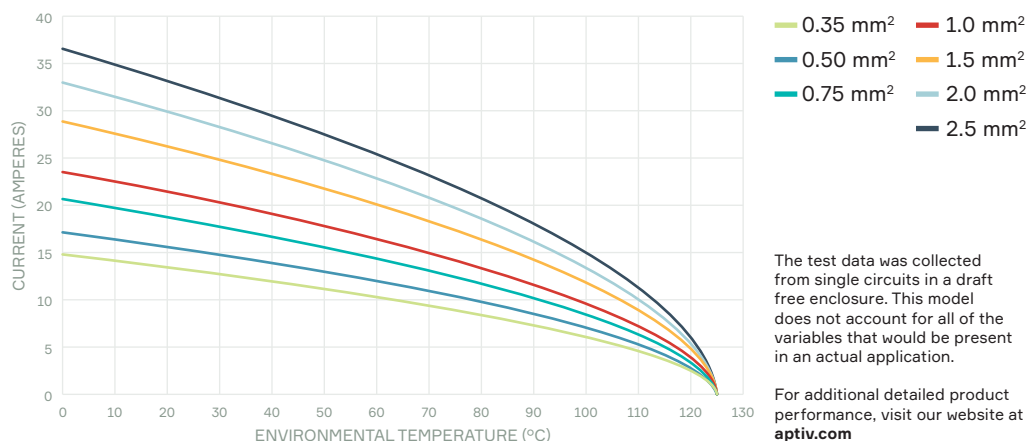
## COMPATIBLE SEALS

| Type       | Applicable Wire Size (mm <sup>2</sup> ) | Color | Restraint Ring                                                                     | Part Number |
|------------|-----------------------------------------|-------|------------------------------------------------------------------------------------|-------------|
|            |                                         |       |  |             |
| Cable Seal | 0.35 - 1.0                              | Red   | No                                                                                 | 15327786    |
| Cable Seal | 1.0 - 2.5                               | Blue  | No                                                                                 | 10757056    |

## DERATING CURVE

Cable range: 0.35 - 2.5 mm<sup>2</sup>  
 Crimp method: Standard  
 Contact plating: Sn  
 Test method: Single circuit in free air\*  
 Mated to: SICMA Male Tab

\* For reference only



## COMPATIBLE WITH SICMA HOUSINGS

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |
| SICMA<br>Inline<br>Sealed Series<br>24 Way (Mixed)                                  | SICMA<br>Inline<br>Unsealed Series<br>24 & 36 Way<br>(Mixed)                        | SICMA<br>Header Interconnect<br>Sealed Series<br>6 & 24 Way<br>(Mixed)              | SICMA<br>Sealed<br>Relay Sockets<br>8 Way (Mixed)                                   | SICMA<br>Mini-Sealed<br>Series<br>6 Way (Mixed)                                      | SICMA<br>Panel-Through<br>Sealed Series<br>14, 24, 26, 33,<br>34 Way (Mixed)          | SICMA<br>Panel-Through<br>Unsealed Series<br>24, 29, 42 Way<br>(Mixed)                |

# SICMA INLINE SEALED SERIES



SICMA Inline Sealed 6W  
Female & Male

## BENEFITS

- Clean body SICMA/BTS terminals are easily inserted in housing cavity
- Tin, silver, gold plated terminals available

## FEATURES

- Perfect solution for engine compartment at body mount, highly exposed to dirt and water
- Reliable IP68 watertight 6 and 8 Way connector and IP67 for the 24 Way connector
- 6 Way connector is equipped with a casing or holder for corrugated pipe by hinge principle



## AVAILABLE CONFIGURATIONS

|                                        |                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------|
| Cavity Count (ways)                    | 6, 8, 24                                                                          |
| Cavity Configurations (mm)             | 1.5, 2.8                                                                          |
| Centerline Spacing                     | 2-rows 6W: 5 x 6 pitch<br>2-rows 8W: 4.25 x 6 pitch<br>3-rows 24W: 3.33 x 5 pitch |
| Material                               | PBT                                                                               |
| Genders                                | Female, Male                                                                      |
| Sealing Type                           | 6W, 8W – Cable Sealed<br>24W – Mat Sealed                                         |
| Terminal Position Assurance (TPA) Type | PLR (Active Secondary Lock on 6W Female)                                          |
| Connector Position Assurance (CPA)     | No                                                                                |

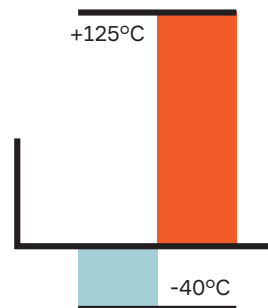


## APPLICATIONS

Exterior, chassis, engine compartment, inline, female mated to device



## TEMPERATURE



## VIBRATION



## CONNECTOR MATING FORCE



## SEALING PROTECTION

Corrugated pipe type is IPx9K guaranteed.



6, 8 Way



24 Way

| Cavity count | Blade size (mm)         | Gender | Dimensions W x H x D (mm) | Fixing type                       | Part number | Color | Indexes offered |
|--------------|-------------------------|--------|---------------------------|-----------------------------------|-------------|-------|-----------------|
| 6            | 2.8<br>(SICMA 2&3)      | F      | 35 x 40 x 17              | N/A                               | 10723553    | Black | 2               |
|              |                         | M      | 30 x 65 x 21              | Fixing grooves for panel cut-out  | 10752307    |       |                 |
| 8            | 1.5<br>(SICMA 2&3 Plus) | F      | 25 x 36x 31               | N/A                               | 13800077    | Black | 1               |
|              |                         | M      | 25 x 27 x 50              | Slot for fixing clip              | 13799643    |       |                 |
| 24           | 1.5 (18) + 2.8 (6)      | F      | 50 x 34 x 33              | N/A                               | 33504115    | Black | 3               |
|              |                         | M      | 50 x 44 x 33              | Clip 15396451 or 33504091         | 15470023    |       |                 |
|              |                         | M      | 59 x 44 x 38              | Mount on Metal Panel 0.7 mm thick | 33500427    |       |                 |

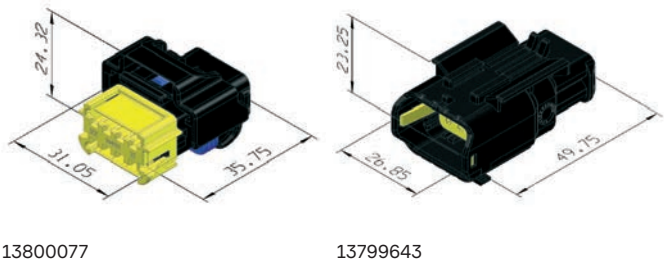


COMPATIBLE SEALS

| Type        | Cavity | Applicable Wire Size (mm²) | Color  | Restraint Ring                                                                      | Part Number |
|-------------|--------|----------------------------|--------|-------------------------------------------------------------------------------------|-------------|
|             |        |                            |        |  |             |
| Cable Seal  | 1.5    | 0.35 - 0.75                | Yellow | Yes                                                                                 | 10736278    |
| Cable Seal  | 1.5    | 0.75 - 2.0                 | Green  | Yes                                                                                 | 10736279    |
| Cavity Plug | 1.5    | N/A                        | White  | Yes                                                                                 | 10787316    |
|             |        |                            |        |  |             |
| Cable Seal  | 2.8    | 0.35 - 1.0                 | Red    | No                                                                                  | 15327786    |
| Cable Seal  | 2.8    | 1.0 - 2.5                  | Blue   | No                                                                                  | 10757056    |
| Cavity Plug | 2.8    | N/A                        | White  | No                                                                                  | 15340264    |

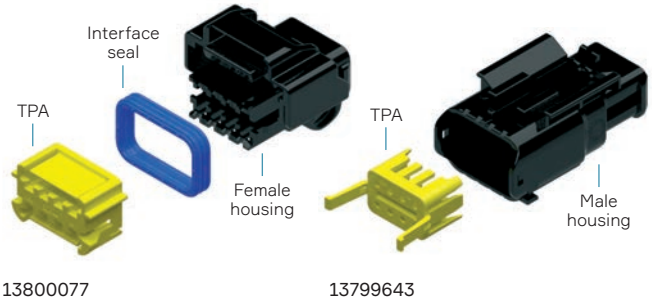


DIMENSION MEASUREMENT SAMPLE





EXPLODED VIEW





COMPATIBLE WITH



# SICMA INLINE UNSEALED SERIES



SICMA Inline Unsealed 36W  
Female & Male

## BENEFITS

- Reliable inline harness sectioning solution
- Compact male and female housings for convenient wire-to-wire mating

## FEATURES

- Mixed sizes of 1.5 and 2.8 mm terminals populating 24 and 36 Way connectors
- Standard fixing slide



## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 10, 24, 36   |
| Cavity Configurations (mm) | 1.5, 2.8     |
| Material                   | PBT          |
| Genders                    | Female, Male |

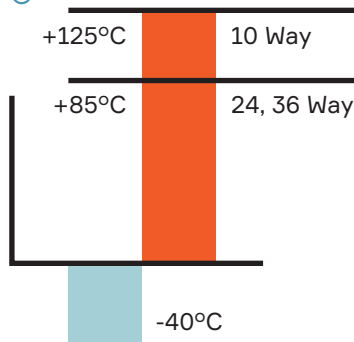


## APPLICATIONS

|                               |
|-------------------------------|
| Harness sectioning in cockpit |
| Dashboard                     |
| Interior connections          |



## TEMPERATURE



## VIBRATION



## CONNECTOR MATING FORCE



10 Way



24 Way

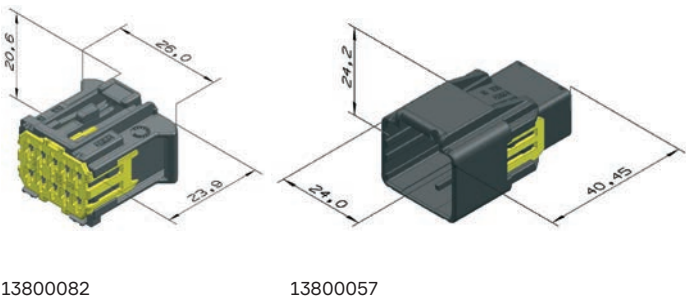


36 Way

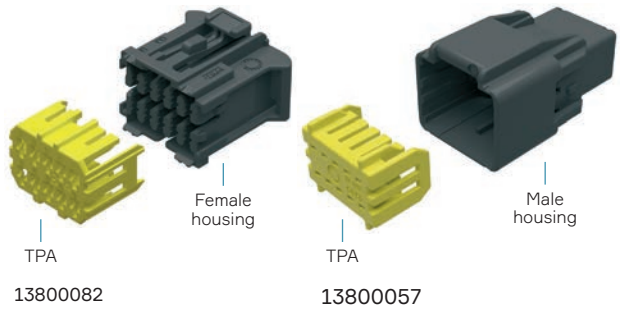
| Cavity count | Blade size (mm)    | Gender | Dimensions L x W x H (mm) | Part number | Color | Index | Indexes offered |
|--------------|--------------------|--------|---------------------------|-------------|-------|-------|-----------------|
| 10           | 1.5                | F      | 36.85 x 26.95 x 29.70     | 13800082    | Black | A     | 5               |
|              |                    | M      | 24.20 x 24.00 x 40.45     | 13800057    |       |       |                 |
| 24           | 1.5 (18) + 2.8 (6) | F      | 49.10 x 32.65 x 33.30     | 13751295    | Black | A     | 3               |
|              |                    | M      | 49.10 x 32.65 x 43.90     | 33500326    |       |       |                 |
| 36           | 1.5 (30) + 2.8 (6) | F      | 60.84 x 34.40 x 28.70     | 33500789    | Black | A     | 2               |
|              |                    | M      | 54.20 x 25.30 x 47.15     | 13651194    |       |       |                 |



DIMENSION MEASUREMENT SAMPLE



EXPLODED VIEW



COMPATIBLE WITH



# SICMA MINI-SEALED SERIES



SICMA Mini-Sealed 3W  
Female & Male

## BENEFITS

- Standard connection system
- Reliable inline harness sectioning connectors featuring a mechanical coding

## FEATURES

- Compatible with standard interface footprint of several devices used in automotive and commercial vehicles
- Jet spray water protection
- Compact design around 1.5 and 2.8 mm terminal

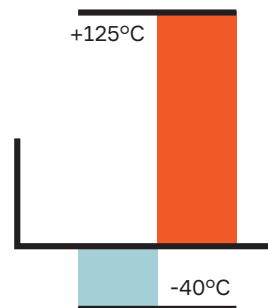


## AVAILABLE CONFIGURATIONS

|                            |                        |
|----------------------------|------------------------|
| Cavity Count (ways)        | 2, 3, 4, 5, 6, 6 Mixed |
| Cavity Configurations (mm) | 1.5, 2.8               |
| Material                   | PBT GF 30              |
| Genders                    | Female, Male           |
| Sealing Type               | Mat Sealed             |
| CPA                        | Optional for 2 Way     |



## TEMPERATURE



## VIBRATION



## CONNECTOR MATING FORCE



## SEALING PROTECTION



## APPLICATIONS

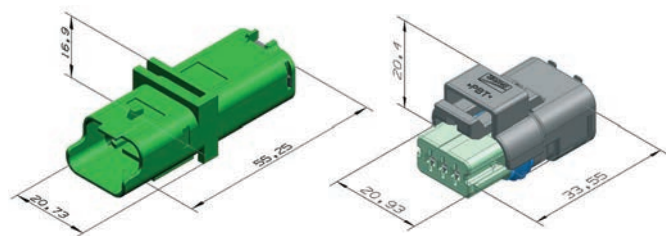
Body and chassis

Engine compartment

| Cavity count | Blade size (mm)   | Gender | Dimensions L x W x H (mm) | Part number | Color | Indexes offered |
|--------------|-------------------|--------|---------------------------|-------------|-------|-----------------|
| 2            | 1.5               | F      | 17.60 x 18.70 x 33.50     | 10820158    | Black | 9               |
|              |                   | M      | 17.40 x 16.90 x 55.20     | 10787262    |       | 7               |
| 3            | 1.5               | F      | 20.93 x 20.40 x 33.55     | 10820167    | Black | 8               |
|              |                   | M      | 20.73 x 16.90 x 55.25     | 10788983    |       | 6               |
| 4            | 1.5               | F      | 25.00 x 20.30 x 33.60     | 10763691    | Black | 3               |
|              |                   | M      | 23.85 x 12.90 x 55.65     | 10768812    |       |                 |
| 5            | 1.5               | F      | 27.10 x 20.55 x 33.80     | 10820113    | Black | 3               |
|              |                   | M      | 27.30 x 16.60 x 55.45     | 33500323    |       |                 |
| 6            | 1.5               | F      | 34.90 x 21.60 x 33.75     | 10866615    | Black | 3               |
|              |                   | M      | 34.95 x 16.55 x 55.70     | 13716617    |       |                 |
| 6 Mixed      | 1.5 (4) + 2.8 (2) | F      | 34.90 x 21.60 x 33.75     | 10866611    | Black | 3               |
|              |                   | M      | 34.95 x 16.55 x 55.70     | 15396354    |       |                 |



## DIMENSION MEASUREMENT SAMPLE

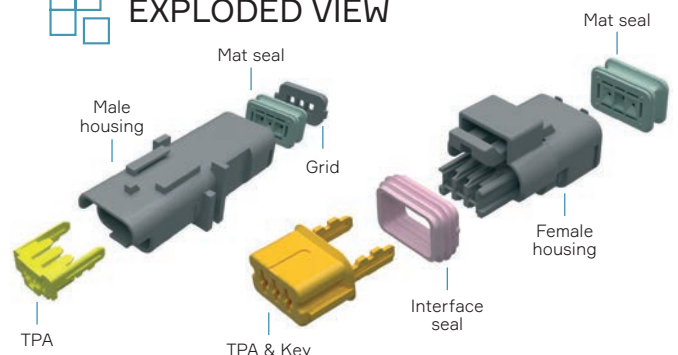


10788983

10820167



## EXPLODED VIEW



10788983

10820167



## COMPATIBLE WITH



# SICMA PANEL-THROUGH SEALED SERIES



SICMA Panel-Through Sealed 14W  
Female & Male

## BENEFITS

- Compact size for a panel mount solution and electrical link passing through a wall
- Circular through hole convenient for implementation

## FEATURES

- Pass-through bulk head type, mounted on a metal panel sheet
- Door-to-body, cockpit-to-engine or battery-to-inverter (HEV/EV) solution



## AVAILABLE CONFIGURATIONS

|                            |                             |
|----------------------------|-----------------------------|
| Cavity Count (ways)        | 14, 16, 24, 26*, 33, 34, 50 |
| Cavity Configurations (mm) | 0.64, 1.5, 2.8              |
| Sealing Type               | Mat Sealed                  |
| Material                   | PBT                         |
| Genders                    | Female, Male                |

\* 26 Way female sealed housing mates with 29 Way male unsealed housing (3 ways are neutralized).

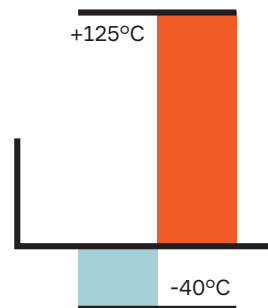


## APPLICATIONS

- Door-to-body connection
- Firewall between cockpit and engine interconnection
- Bulkhead for battery control in HV/EHV



## TEMPERATURE



## VIBRATION



## CONNECTOR MATING FORCE



14, 16, 24, 26,  
33, 34 Way



50 Way



## SEALING PROTECTION



14, 16, 24, 26,  
33, 34 Way

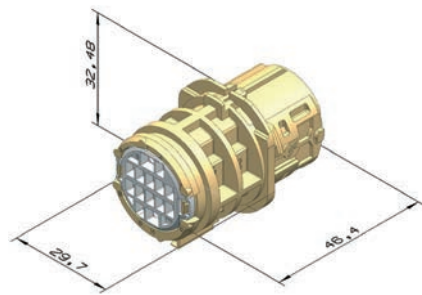


50 Way

| Cavity count | Blade size (mm)               | Gender | Dimensions L x W x H (mm) | Part number | Color | Indexes offered |
|--------------|-------------------------------|--------|---------------------------|-------------|-------|-----------------|
| 14           | 1.5 (10) + 2.8 (4)            | F      | ø 36.50 x 33.40           | 33517516    | Black | 1               |
|              |                               | M      | ø 29.70 x 46.40           | 13798672    |       |                 |
| 16           | 1.5                           | F      | ø 36.30 x 33.40           | 10779313    | Black | 1               |
|              |                               | M      | ø 29.70 x 46.40           | 33500530    |       |                 |
| 24           | 1.5 (18) + 2.8 (6)            | F      | 49.10 x 32.65 x 33.30     | 10820454    | Black | 4               |
|              |                               | M      | 59.40 x 37.90 x 43.90     | 33500427    |       |                 |
| 26           | 0.64 (18) + 1.5 (4) + 2.8 (4) | F      | 35.00 x 59.65 x 7.55      | 10811873    | Black | 1               |
|              |                               | M      | 79.00 x 37.00 x 41.60     | 10811880    |       |                 |
| 33           | 1.5 (28) + 2.8 (5)            | F      | ø 42.70 x 40.60           | 33503444    | Black | 2               |
|              |                               | M      | ø 40.00 x 51.60           | 33503443    |       |                 |
| 34           | 1.5 (30) + 2.8 (4)            | F      | ø 40.30 x 38.75           | 10763095    | Black | 2               |
|              |                               | M      | ø 42.00 x 48.60           | 10889065    |       |                 |
| 50           | 1.5                           | F      | 44.50 x 51.60 x 38.20     | 10867079    | Black | 1               |
|              |                               | M      | 47.60 x 89.50 x 54.90     | 10866552    |       |                 |



## DIMENSION MEASUREMENT SAMPLE



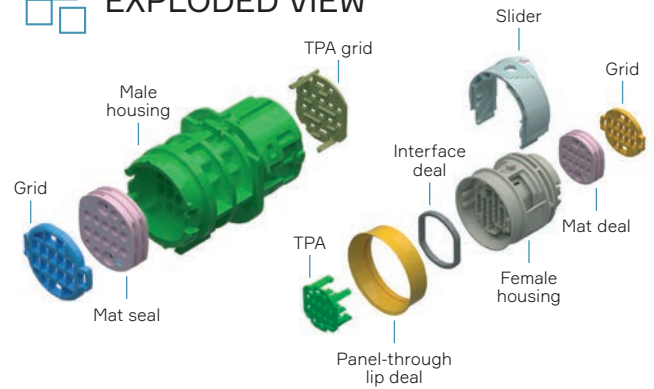
13798672



33517516



## EXPLODED VIEW



13798672

33517516



## COMPATIBLE WITH



# SICMA PANEL-THROUGH UNSEALED SERIES



SICMA Panel-Through Unsealed 29W  
Female & Male

## BENEFITS

- Compact size for a panel mount solution and electrical link passing through a wall
- Retractable protecting grid for male terminals to avoid pin bending

## FEATURES

- Pass-through bulk head type, mounted on a metal panel sheet
- Providing a convenient door-to-body or a reliable cockpit-to-engine solution

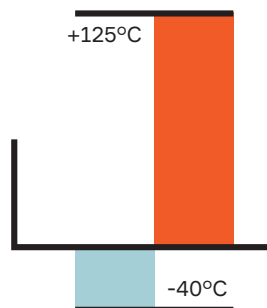


## AVAILABLE CONFIGURATIONS

|                            |                |
|----------------------------|----------------|
| Cavity Count (ways)        | 24, 29, 42     |
| Cavity Configurations (mm) | 0.64, 1.5, 2.8 |
| Material                   | PBT            |
| Genders                    | Female, Male   |



## TEMPERATURE



## VIBRATION



## APPLICATIONS

|                                                     |
|-----------------------------------------------------|
| Door-to-body connection                             |
| Firewall between cockpit and engine interconnection |
| Bulkhead for battery control in HV/EHV              |



## CONNECTOR MATING FORCE



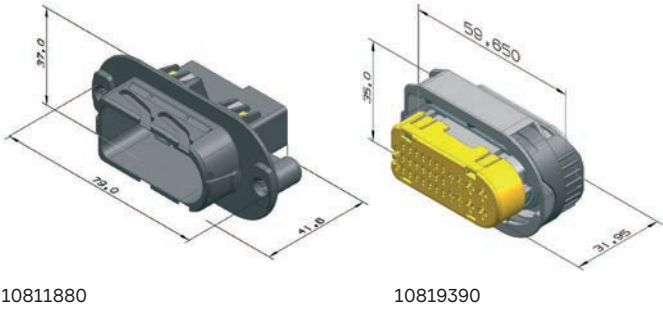
| Cavity count | Blade size (mm)               | Gender | Dimensions L x W x H (mm) | Part number | Color | Indexes offered |
|--------------|-------------------------------|--------|---------------------------|-------------|-------|-----------------|
| 24           | 0.64 (12) + 1.5 (8) + 2.8 (4) | F      | 35.00 x 59.65 x 31.95     | 33500458    | Black | 1               |
|              |                               | M      | 37.00 x 79.00 x 41.60     | 33500459    |       |                 |
| 29           | 0.64 (21) + 1.5 (4) + 2.8 (4) | F      | 35.00 x 59.65 x 31.95     | 10819390    | Black | 1               |
|              |                               | M      | 37.00 x 79.00 x 41.60     | 10811880    |       |                 |
| 42           | 1.5 (34) + 2.8 (8)            | F      | 44.20 x 63.50 x 29.20     | 10811874    | Black | 1               |
|              |                               | M      | 47.00 x 83.50 x 42.70     | 10811875    |       |                 |

### Cover

|         |     |     |                       |          |       |     |
|---------|-----|-----|-----------------------|----------|-------|-----|
| 24 & 29 | N/A | N/A | 59.65 x 25.00 x 21.20 | 33508013 | Black | N/A |
|---------|-----|-----|-----------------------|----------|-------|-----|

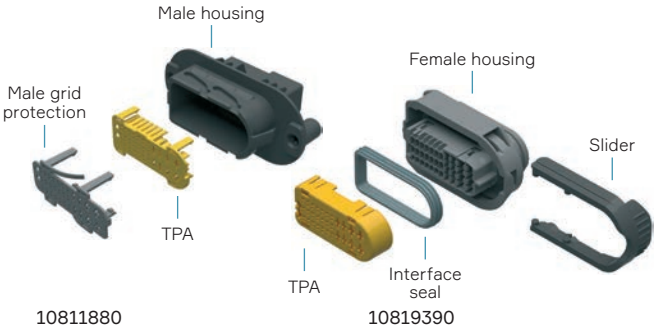


DIMENSION MEASUREMENT SAMPLE





EXPLODED VIEW





COMPATIBLE WITH



# SICMA 1.5 SensoMate™ SERIES



SICMA SensoMate™ 6W  
Female & Male

## BENEFITS

- High performance connector featuring T4 / V3 performance
- Back shell covers available

## FEATURES

- Suitable for harsh environment
- CPA is pre-mounted
- Compatible with Mini-Sealed family



## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 4, 5, 6      |
| Cavity Configurations (mm) | 1.5          |
| Material                   | PBT          |
| Genders                    | Female, Male |
| Sealing Type               | Mat Sealed   |

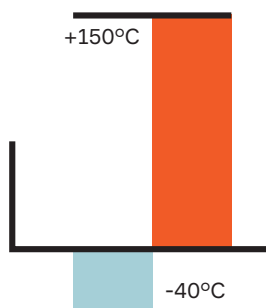


## APPLICATIONS

Sensors and actuators on engine mount  
Air filter and pressure devices



## TEMPERATURE



## VIBRATION



## CONNECTOR MATING FORCE



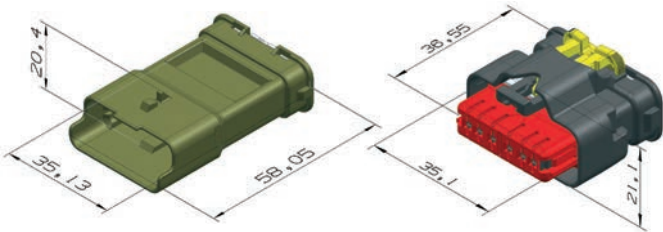
## SEALING PROTECTION



| Cavity count | Blade size (mm) | Gender | Dimensions L x W x H (mm) | Part number | Color  | Indexes offered |
|--------------|-----------------|--------|---------------------------|-------------|--------|-----------------|
| 4            | 1.5             | F      | 24.50 x 20.30 x 36.55     | 13876521    | Black  | 5               |
|              |                 | M      | 24.50 x 15.30 x 58.05     | 33502133    |        |                 |
| 5            | 1.5             | F      | 27.80 x 20.30 x 36.55     | 13893671    | Black  | 5               |
|              |                 | M      | 27.80 x 15.30 x 58.05     | 13855072    |        |                 |
| 6            | 1.5             | F      | 35.01 x 21.10 x 32.80     | 13885362    | Yellow | 5               |
|              |                 | M      | 35.01 x 16.10 x 58.05     | 13967810    |        |                 |



DIMENSION MEASUREMENT SAMPLE

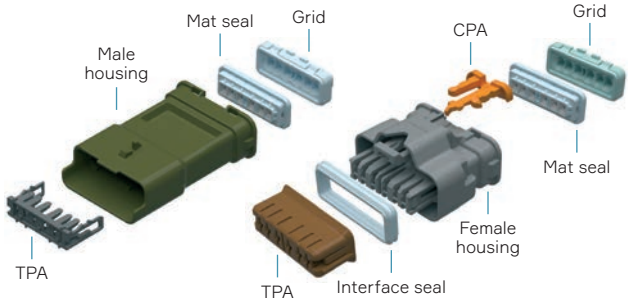


33511739

33511993



EXPLODED VIEW



33511739

33511993



COMPATIBLE WITH



SICMA 1.5 Series  
Terminals



Cover



# SICMA SEALED RELAYS



SICMA Sealed Relay Socket 8W Female

## BENEFITS

- Reliable connection to relay lasting throughout entire vehicle life cycle
- Easily disconnected and reconnected during relay change

## FEATURES

- Sliding lever mate assist for easy mating to the relay switch
- Standard to different EOBD (European on Board Diagnostics) devices



## AVAILABLE CONFIGURATIONS

|                            |              |
|----------------------------|--------------|
| Cavity Count (ways)        | 8            |
| Cavity Configurations (mm) | 2.8, 8.0     |
| Material                   | PBT GF 15    |
| Genders                    | Female       |
| Sealing Type               | Cable Sealed |



## APPLICATIONS

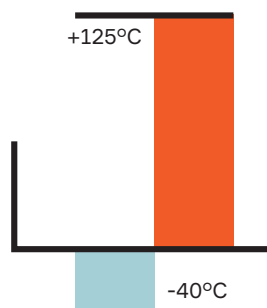
Pre-heating of diesel engines

Comfort heating of cockpit

Antipollution systems by EOBD



## TEMPERATURE



## VIBRATION



## CONNECTOR MATING FORCE



## SEALING PROTECTION



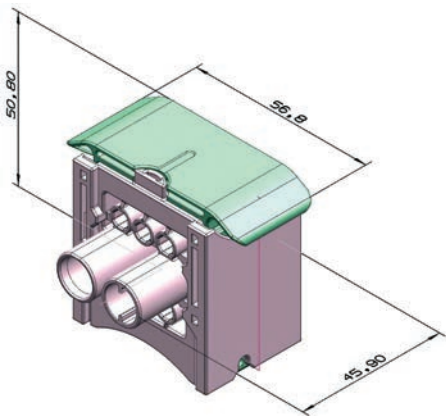
| Cavity count | Blade size (mm)  | Gender | Dimensions L x W x H (mm) | Part number | Color |
|--------------|------------------|--------|---------------------------|-------------|-------|
| 8            | 2.8 (6) + 8* (2) | F      | 56.8 x 50.8 x 45.9        | 10812007    | Black |
| 8            | 2.8 (6) + 8* (2) | F      | 56.8 x 50.8 x 45.9        | 13949302    | Grey  |

\* Please, consult Aptiv.

 COMPATIBLE SEALS

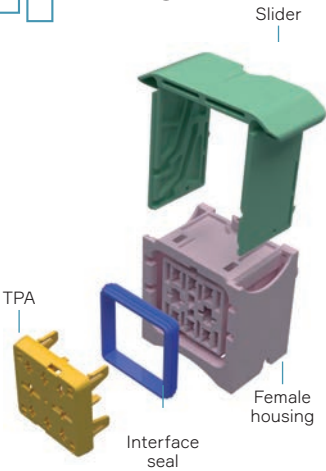
| Type        | Applicable Wire Size (mm²) | Color | Restraint Ring                                                                     | Part Number |
|-------------|----------------------------|-------|------------------------------------------------------------------------------------|-------------|
|             |                            |       |  |             |
| Cable Seal  | 0.35 - 1.0                 | Red   | No                                                                                 | 15327786    |
| Cable Seal  | 1.0 - 2.5                  | Blue  | No                                                                                 | 10757056    |
| Cavity Plug | N/A                        | White | No                                                                                 | 15340264    |

 DIMENSION MEASUREMENT SAMPLE



13949302

 EXPLODED VIEW

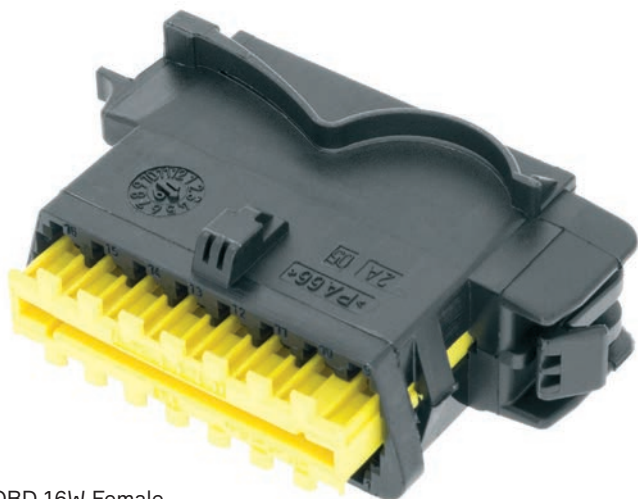


13949302

 COMPATIBLE WITH



# SICMA OBD (ON-BOARD DIAGNOSTIC) SERIES



OBD 16W Female

## BENEFITS

- Optional protection cap cover with hinge against liquid splashes
- Pass-through panel mount inside cockpit
- Easiness of wiring and small shape housing

## FEATURES

- Unsealed housing for SICMA clean body terminal with lock reinforcement (TPA)
- Standard “On-Board Diagnostic (OBD)” receptacle with 16 Ways

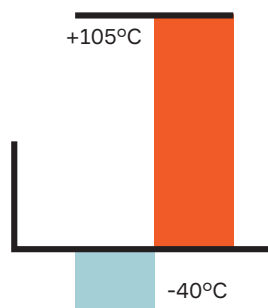


## AVAILABLE CONFIGURATIONS

|                                        |                                  |
|----------------------------------------|----------------------------------|
| Cavity Count (ways)                    | 16                               |
| Cavity Configurations (mm)             | 1.5                              |
| Genders                                | Female                           |
| Sealing Type                           | Unsealed                         |
| Centerline Spacing (mm)                | 4.0                              |
| Terminal Position Assurance (TPA) Type | Primary Lock Reinforcement (PLR) |



## TEMPERATURE



## VIBRATION



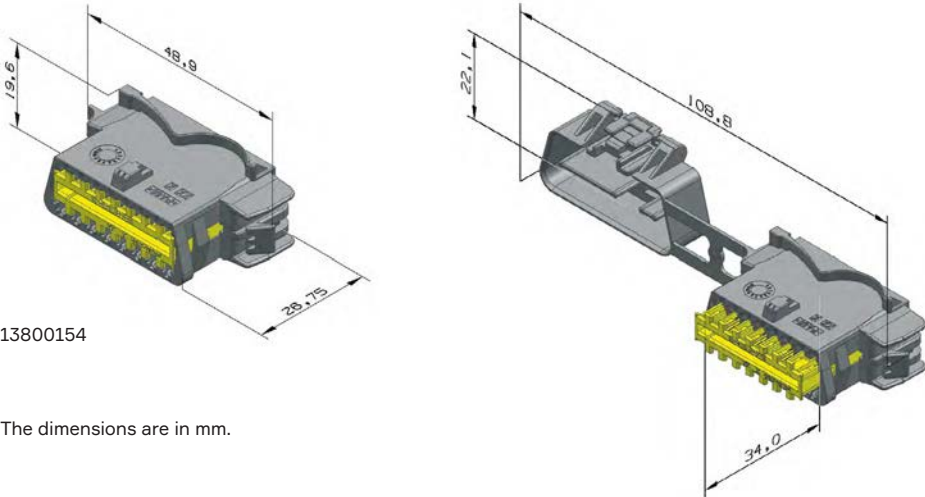
## APPLICATIONS

Cockpit

| Cavity count | Blade size (mm) | Gender | Dimensions W x H x D (mm) | Part number | Index       | Color |
|--------------|-----------------|--------|---------------------------|-------------|-------------|-------|
| 16           | 1.5             | F      | 108.8 x 22.1 x 31.85      | 13800155    | with cap    | Gray  |
| 16           | 1.5             | F      | 49.3 x 19.6 x 31.85       | 13800154    | without cap | Black |



DIMENSION MEASUREMENT SAMPLE

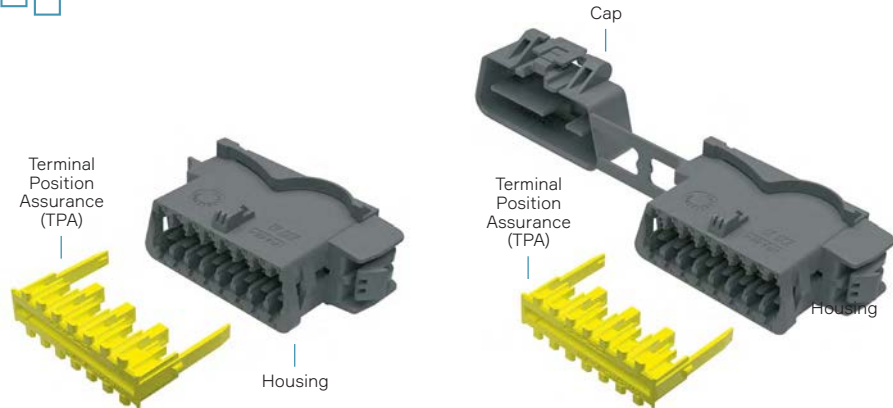


13800154

The dimensions are in mm.



EXPLODED VIEW



13800154

13800155



COMPATIBLE WITH



# SICMA HEADERS INTERCONNECT SEALED



SICMA Full Interconnect Sealed 56W  
Female & Pin Header

## BENEFITS

- Market standard footprint interface-to-device headers
- Sliding lever can be installed in right and left position

## FEATURES

- Wire-to-Electronic Printed Circuit Board (PCB) solution for electronic control units
- Sealed connection from harness wiring to electronic equipment

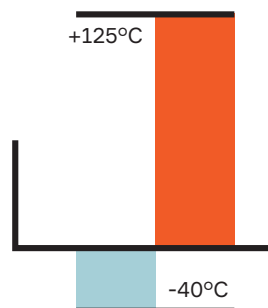


## AVAILABLE CONFIGURATIONS

|                            |                    |    |    |    |
|----------------------------|--------------------|----|----|----|
| Cavity Count (ways)        | 6                  | 24 | 56 | 90 |
| Number of Rows             | 1                  | 3  | 1  | 3  |
| Pitch Between Rows (mm)    | -                  | 5  | 6  | 6  |
| Cavity Configurations (mm) | 1.5, 2.8, Mixed    |    |    |    |
| Material                   | PBT GF 30          |    |    |    |
| Genders                    | Female, Pin Header |    |    |    |
| Sealing Type               | Mat Sealed         |    |    |    |



## TEMPERATURE



## SEALING PROTECTION

IP68  
IPX9K



## APPLICATIONS

Engine management with gas converter

Automatic gear box management



## VIBRATION



6, 24 Way



56, 90 Way

| Cavity count | Blade size (mm)    | Gender | Dimensions<br>L x W x H (mm) | Part number | Orientation | Locking cam | Color | Indexes offered |
|--------------|--------------------|--------|------------------------------|-------------|-------------|-------------|-------|-----------------|
| 6            | 1.5 (4) + 2.8 (2)  | F      | 34.90 x 21.60 x 33.50        | 10866611    | 180°        | No          | Black | 1               |
| 24           | 1.5 (18) + 2.8 (6) | F      | 32.65 x 49.10 x 35.20        | 10820454    | 180°        | No          | Black | 4               |
| 24           | 1.5 (18) + 2.8 (6) | F      | 32.65 x 49.10 x 35.20        | 33504115    | 180°        | Yes         | Black | 4               |
| 56           | 1.5                | F      | 136.30 x 30.70 x 43.65       | 13669859    | 180°        | No          | Black | 1               |
| 90           | 1.5                | F      | 136.00 x 36.65 x 42.65       | 10776517    | 180°        | No          | Black | 1               |
| 90           | 1.5                | F      | 136.20 x 36.50 x 42.65       | 33525675    | 180°        | Yes         | Black | 1               |

### Pin Header

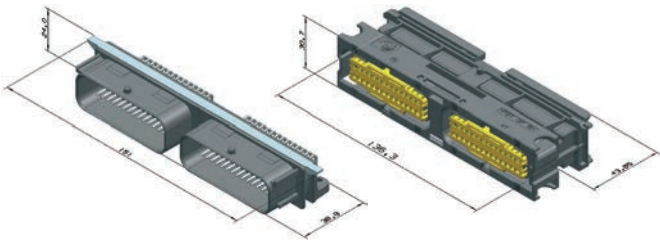
|    |     |            |                        |          |      |     |       |   |
|----|-----|------------|------------------------|----------|------|-----|-------|---|
| 6  | N/A | Pin Header | 38.00 x 19.00 x 29.58  | 33508361 | 90°  | N/A | Black | 1 |
| 24 | N/A | Pin Header | 42.80 x 25.60 x 45.50  | 33503978 | 180° | N/A | Black | 3 |
| 24 | N/A | Pin Header | 46.20 x 27.30 x 40.20  | 33501039 | 90°  | N/A | Black | 3 |
| 56 | N/A | Pin Header | 152.00 x 24.00 x 33.65 | 33511394 | 90°  | N/A | Black | 1 |
| 90 | N/A | Pin Header | 147.02 x 32.00 x 27.00 | 33508365 | 180° | N/A | Black | 1 |

### Cover

|    |     |     |                        |          |      |     |       |     |
|----|-----|-----|------------------------|----------|------|-----|-------|-----|
| 56 | N/A | N/A | 150.00 x 21.80 x 23.30 | 15340261 | 180° | N/A | Black | N/A |
| 90 | N/A | N/A | 152.00 x 35.90 x 27.30 | 15340257 | 180° | N/A | Black | N/A |



### DIMENSION MEASUREMENT SAMPLE

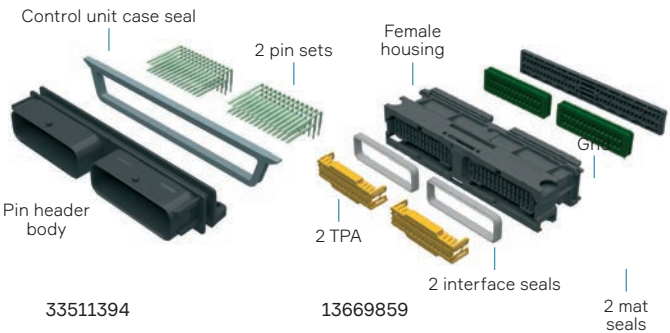


33511394

13669859



### EXPLODED VIEW



33511394

13669859



### COMPATIBLE WITH



SICMA 1.5 Series  
Terminals



SICMA 2.8 Series  
Terminals



Cover



Locking Cam





# HEADERS



# CMC HEADERS

32, 48, 64 Way



CMC 32W Pin Header

## BENEFITS

- Compact and small form factor
- Sealable pin header by cover and gasket
- Tin-plated pins, silver-plated upon demand
- Through hole solder type

## FEATURES

- Standard interface interchangeable with multiple female housing suppliers
- Easy solder process to a PCB\*
- Small occupancy on the PCB\*

\* Printed circuit board



## TECHNICAL CHARACTERISTICS

|             |                     |
|-------------|---------------------|
| Orientation | 90°                 |
| Materials   | PA4.6 GF30%, CuZn30 |
| Genders     | Male                |

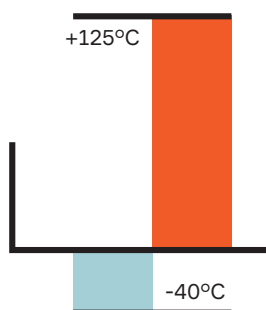


## APPLICATIONS

|                   |
|-------------------|
| Engine management |
| Gas converter     |
| Body control      |



## TEMPERATURE



## VIBRATION



## SEALING PROTECTION



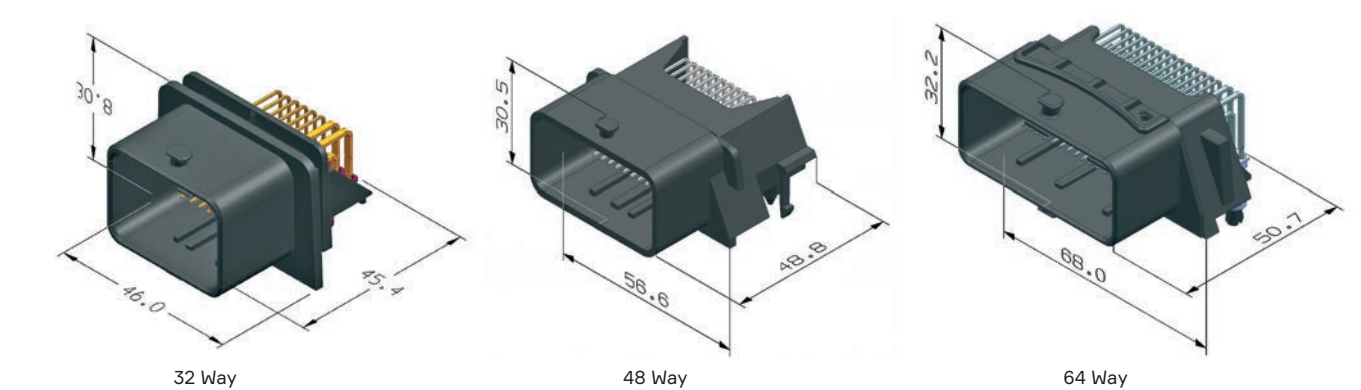
## CONNECTOR MATING FORCE

< 60 N

| Part number | Cavity count (ways) | Color coding |
|-------------|---------------------|--------------|
| 33503152    | 32                  | Blue         |
| 33503150    |                     | Black        |
| 33503149    |                     | Grey         |
| 33503151    |                     | Brown        |
| 33503457    | 48                  | Black        |
| 35110623    | 64                  | Grey         |
| 33504510    |                     | Black        |



DIMENSION MEASUREMENT SAMPLE





COMPATIBLE WITH



# CMC PIN HEADER

## 112 Way



CMC 112W Pin Header

### BENEFITS

- Compact and small form factor
- Sealable pin header by cover and gasket
- Tin-plated pins, silver-plated upon demand
- Through hole solder type

### FEATURES

- Standard interface interchangeable with multiple female housing suppliers
- Easy solder process to a PCB\*
- Small occupancy on the PCB\*

\* Printed circuit board



### TECHNICAL CHARACTERISTICS

|             |                     |
|-------------|---------------------|
| Orientation | 90°                 |
| Materials   | PA4.6 GF30%, CuZn30 |
| Genders     | Male                |

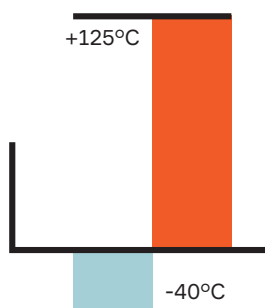


### APPLICATIONS

|                   |
|-------------------|
| Engine management |
| Gas converter     |
| Body control      |



### TEMPERATURE



### VIBRATION



### CONNECTOR MATING FORCE

< 60 N



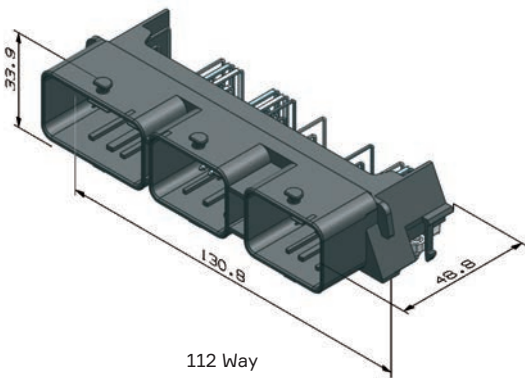
### SEALING PROTECTION

IP68  
IPX9K

| Part number | Cavity count (ways) | Color coding         |
|-------------|---------------------|----------------------|
| 33504045    | 112 (48+32+32)      | Black + Grey + Brown |



DIMENSION MEASUREMENT SAMPLE





COMPATIBLE WITH



# SICMA HEADERS SEALED



SICMA Sealed 56 W Header

## BENEFITS

- Market standard footprint interface-to-device headers
- Sliding lever can be installed in right and left position

## FEATURES

- Wire-to-Electronic Printed Circuit Board (PCB) solution for electronic control units
- Sealed connection from harness wiring to electronic equipment



## TECHNICAL CHARACTERISTICS

|                            |                 |    |    |    |
|----------------------------|-----------------|----|----|----|
| Cavity Count (ways)        | 6               | 24 | 56 | 90 |
| Number of Rows             | 1               | 3  | 1  | 3  |
| Pitch Between Rows (mm)    | -               | 5  | 6  | 6  |
| Cavity Configurations (mm) | 1.5, 2.8, Mixed |    |    |    |
| Material                   | PBT GF 30       |    |    |    |
| Genders                    | Pin Header      |    |    |    |
| Sealing Type               | Mat Sealed      |    |    |    |



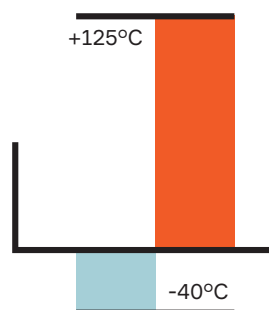
## APPLICATIONS

Engine management with gas converter

Automatic gear box management



## TEMPERATURE



## SEALING PROTECTION

IP68  
IPX9K



## VIBRATION

25G

6, 24 Way

3G

56, 90 Way

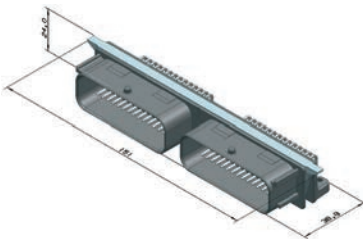
| Cavity count | Blade size (mm) | Gender     | Dimensions L x W x H (mm) | Part number | Orientation | Color | Indexes offered |
|--------------|-----------------|------------|---------------------------|-------------|-------------|-------|-----------------|
| 6            | N/A             | Pin Header | 38.00 x 19.00 x 29.58     | 33508361    | 90°         | Black | 1               |
| 24           | N/A             | Pin Header | 42.80 x 25.60 x 45.50     | 33503978    | 180°        | Black | 3               |
| 24           | N/A             | Pin Header | 46.20 x 27.30 x 40.20     | 33501039    | 90°         | Black | 3               |
| 56           | N/A             | Pin Header | 152.00 x 24.00 x 33.65    | 33511394    | 90°         | Black | 1               |
| 90           | N/A             | Pin Header | 147.02 x 32.00 x 27.00    | 33508365    | 180°        | Black | 1               |

Cover

|    |     |     |                        |          |      |       |     |
|----|-----|-----|------------------------|----------|------|-------|-----|
| 56 | N/A | N/A | 150.00 x 21.80 x 23.30 | 15340261 | 180° | Black | N/A |
| 90 | N/A | N/A | 152.00 x 35.90 x 27.30 | 15340257 | 180° | Black | N/A |



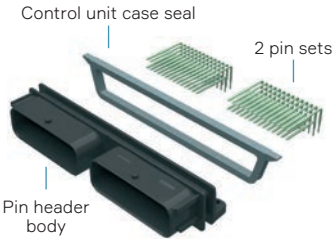
DIMENSION MEASUREMENT SAMPLE



33511394



EXPLODED VIEW



33511394



COMPATIBLE WITH



Cover



Locking Cam

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