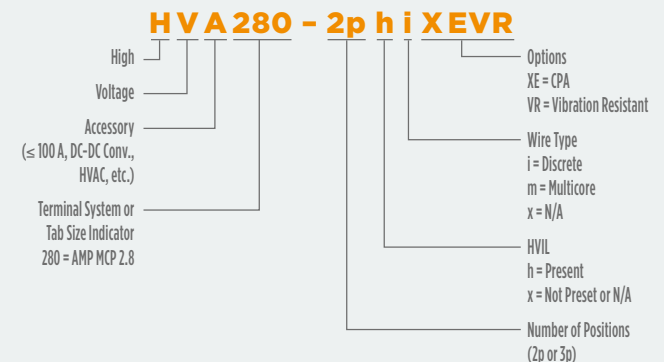# AMP+ HVA 280

INTRODUCTION

Unique design improves manufacturability and packaging. TE's AMP+ low-medium current connectors and headers HVA 280 are finger-proof, touch-safe 2- or 3-position connectors and headers, designed for great flexibility for hybrid and electric vehicle device applications.

The connector system provides multiple latching options and an integrated internal HVIL, allowing for package size optimization and routing flexibility.

In addition, the HVA 280 product family includes a discrete header design unique to the industry that improves packaging and manufacturing efficiency with a two-stage floating latch that creates safety in the system.

The HVA 280 family offers over 3,000 combination options providing solutions for a wide variety of device and wire harness applications like battery pack, DC/DC converter, on-board charger, electric heater, electric climate compressor, and high voltage power distribution.

Naming Convention
HVA 280 Connector Family

H V A 280 – 2p h i X E V R

High

Voltage

Accessory
(≤ 100 A, DC-DC Conv., HVAC, etc.)

Terminal System or
Tab Size Indicator
280 = AMP MCP 2.8

Options
XE = CPA
VR = Vibration Resistant

Wire Type
i = Discrete
m = Multicore
x = N/A

HVIL
h = Present
x = Not Preset or N/A

Number of Positions
(2p or 3p)

Applications

Pin Number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
3.0 mm² and 4.0 mm²,
individually shielded

Voltage Range:
600V DC

Operation Temperature:
-40 °C up to 125 °C

Current Carrying Capacity:
40 A at 85 °C
27 A @ 125 °C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Latch Access Type:
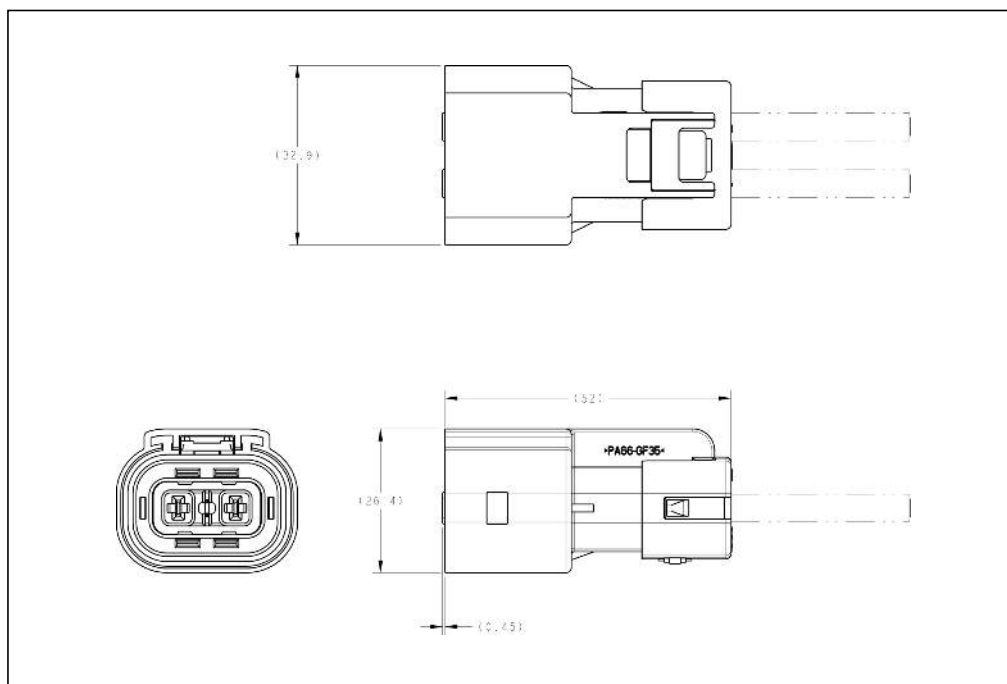Finger access

CPA:
No

Fire Classification:
HB

Vibration Level
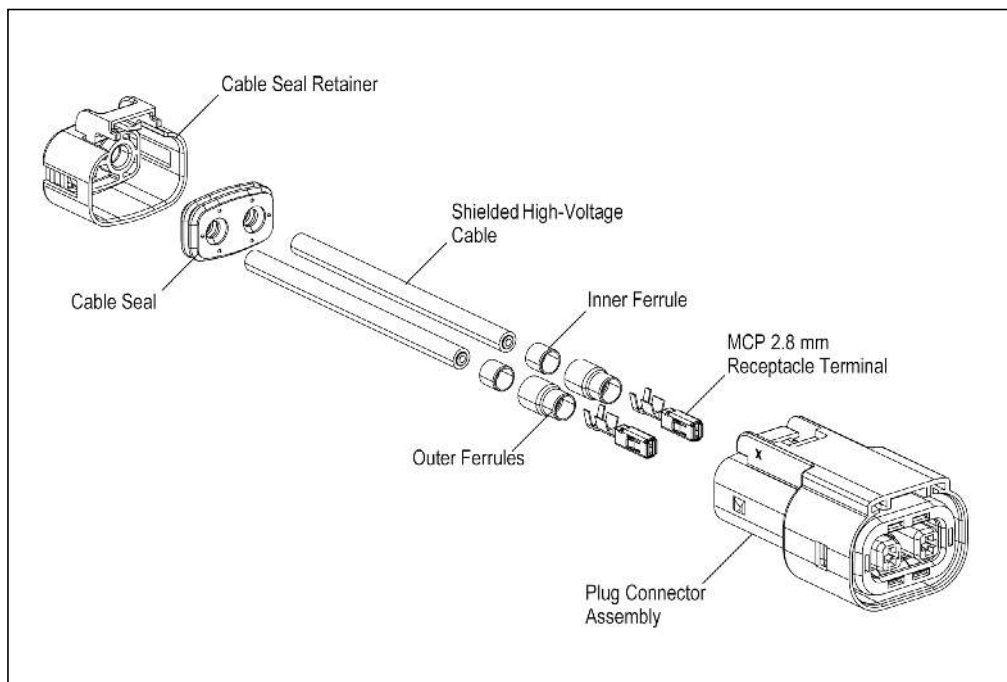V1

Product Specification:
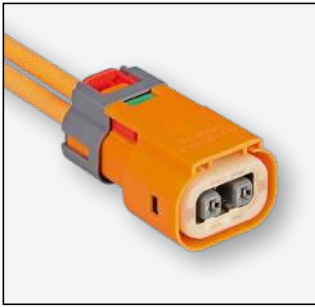108-2394

Application Specification:
114-13259

AMP+ HVA 280 2phi - Plug
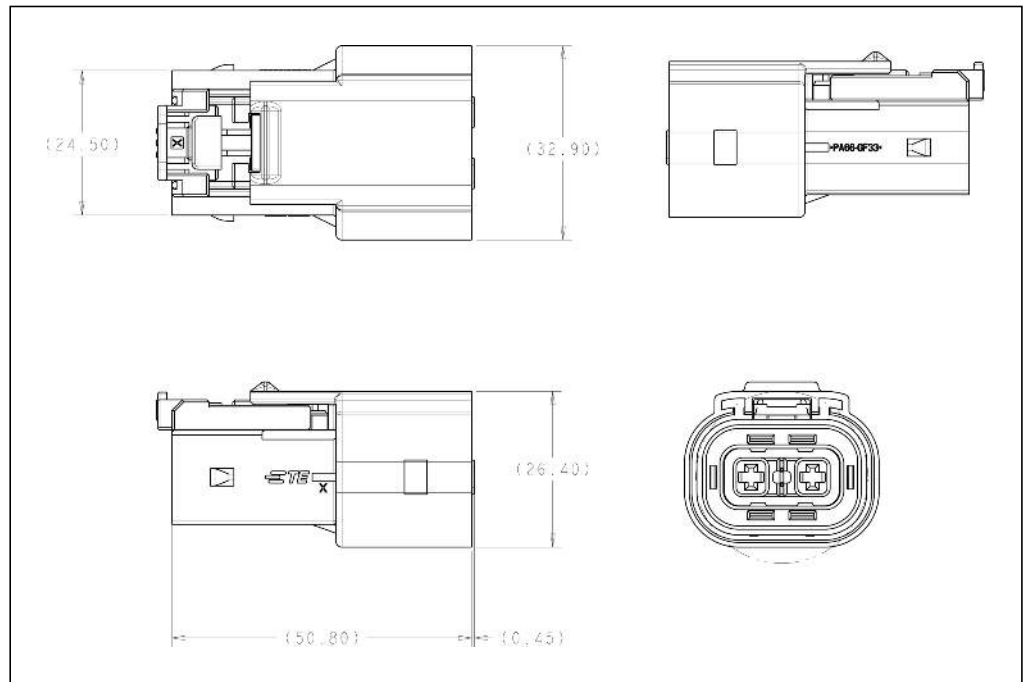

Drawing 2103339 *

* Drawing Number is NOT the Order Number!

AMP+ HVA 280 XE - Plug (individually shielded cable)

Drawing 2103176 *

Technical Features

Pin number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
3.0 mm², 4.0 mm²
individually shielded

Voltage Range:
600V DC

Operation Temperature:
-40 °C up to 125 °C

Current Carrying Capacity:
40A at 85 °C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Latch Access Type:
Finger and tool accessible

CPA:
With/Without

Fire Classification:
HB

Vibration Level:
V1

Shielding:
360 deg

Available Keys:
A, B, D, E, F, G

Product Specification:
108-2394

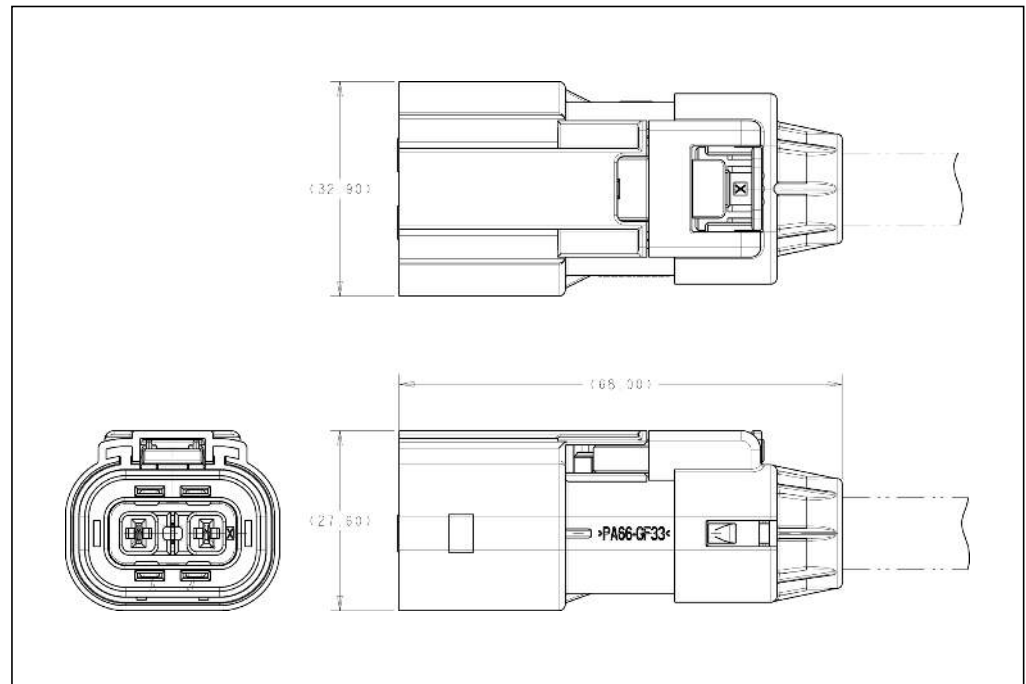**Application Specification:**
114-13259

* Drawing Number is NOT the Order Number!
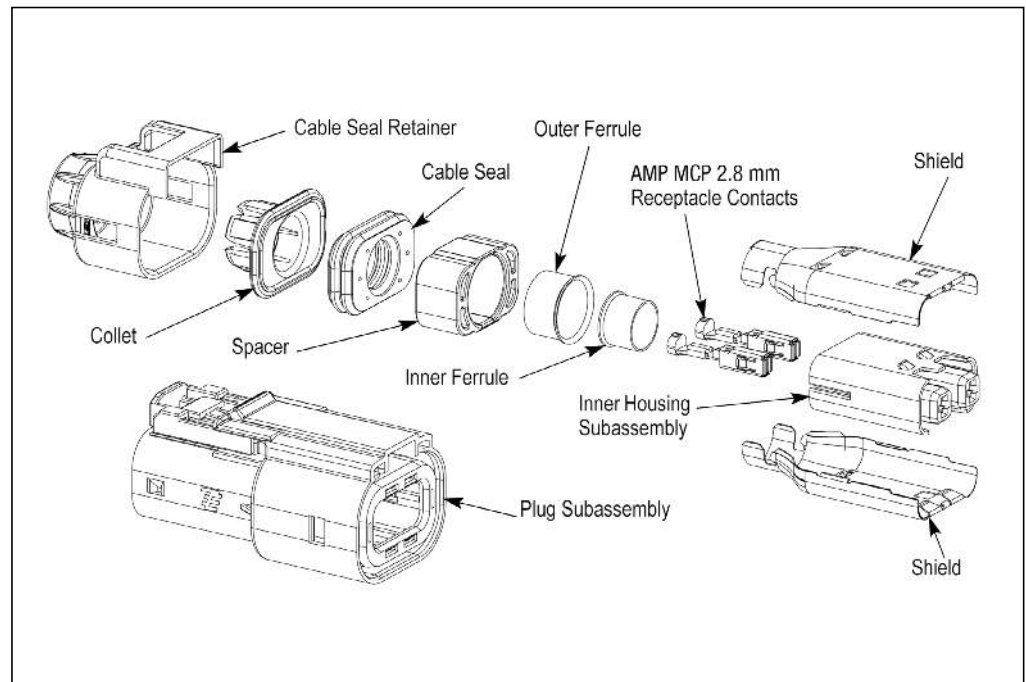
Technical Features

Pin Number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
2 x 4.0 mm^2, multi-core shielded

Voltage Range:
850 VDC

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
33A at 85 °C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Latch Access Type:
Finger and tool accessible

CPA:
With

Fire Classification:
./.

Vibration Level:
AK Severity 2 (body-sealed)

Shielding:
360 deg

Available Keys:
A, B, D, E, F

Product Specification:
108-32020

Application Specification:
114-13305

AMP+ HVA 280 - 2 phm Shunted HVIL Plug (Multi-Core Cable)
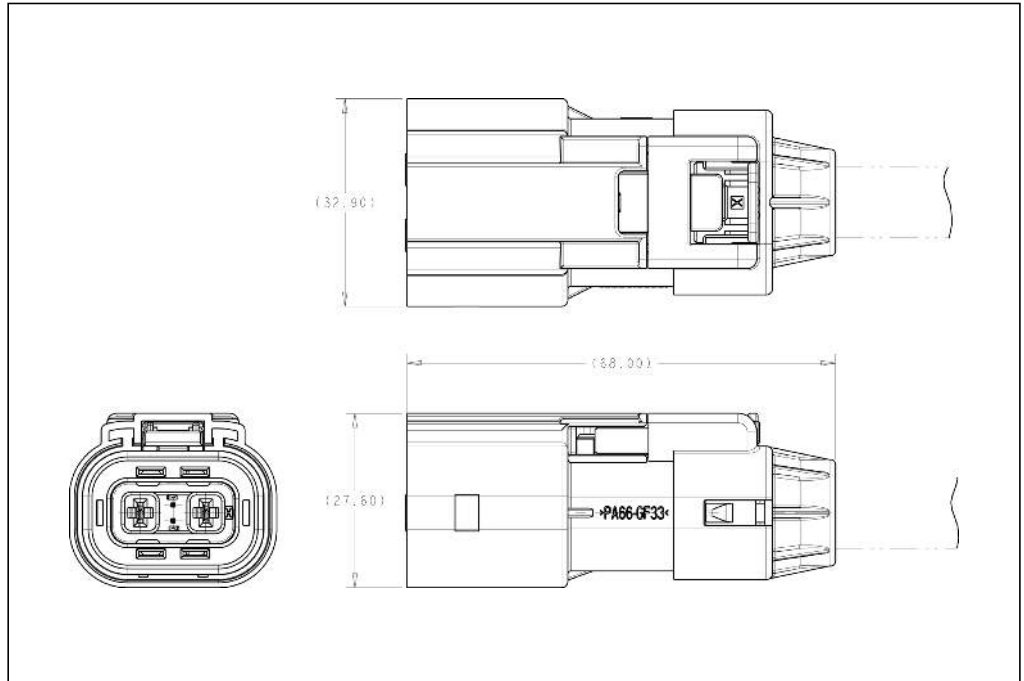

Drawing 2103014 * and 2103437*
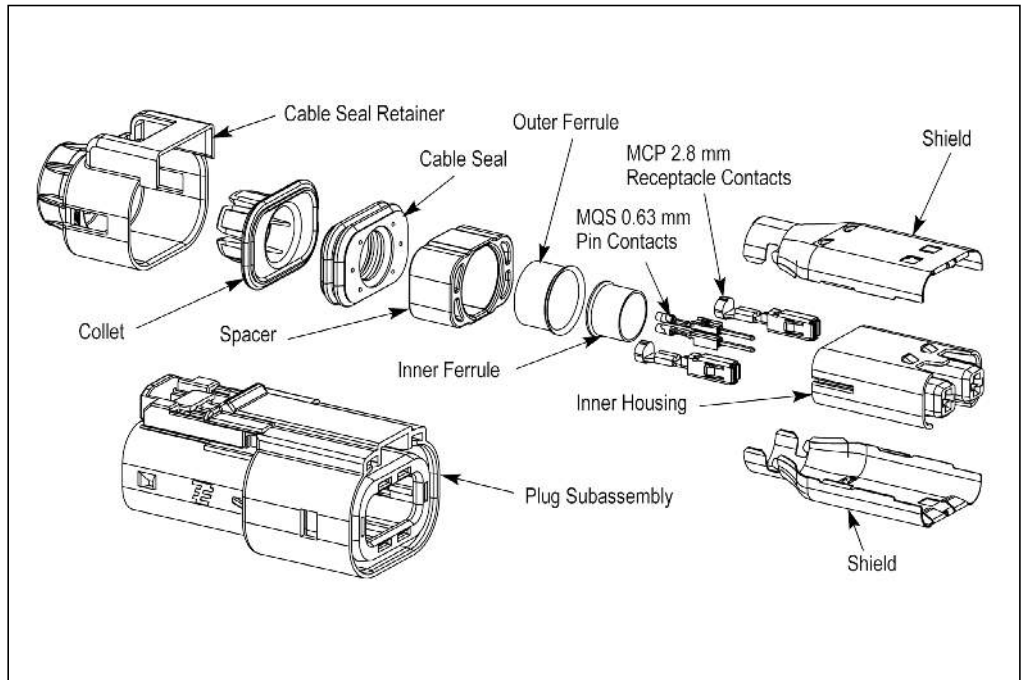

* Drawing Number is NOT the Order Number!

AMP+ HVA 280 - 2 phm - Pass Through HVIL Plug (Multi-Core Cable)

Technical Features

Pin Number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
2 x 4.0 mm^2 + 2 x 0.5 mm^2, multi-core shielded

Voltage Range:
850V DC

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
33A at 85 °C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Latch Access Type:
Finger and tool accessible

CPA:
With

Fire Classification:
./.

Vibration Level:
AK Severity 2 (body-sealed)

Shielding:
360 deg

Available Keys:
A, B, D, E, F

Product Specification:
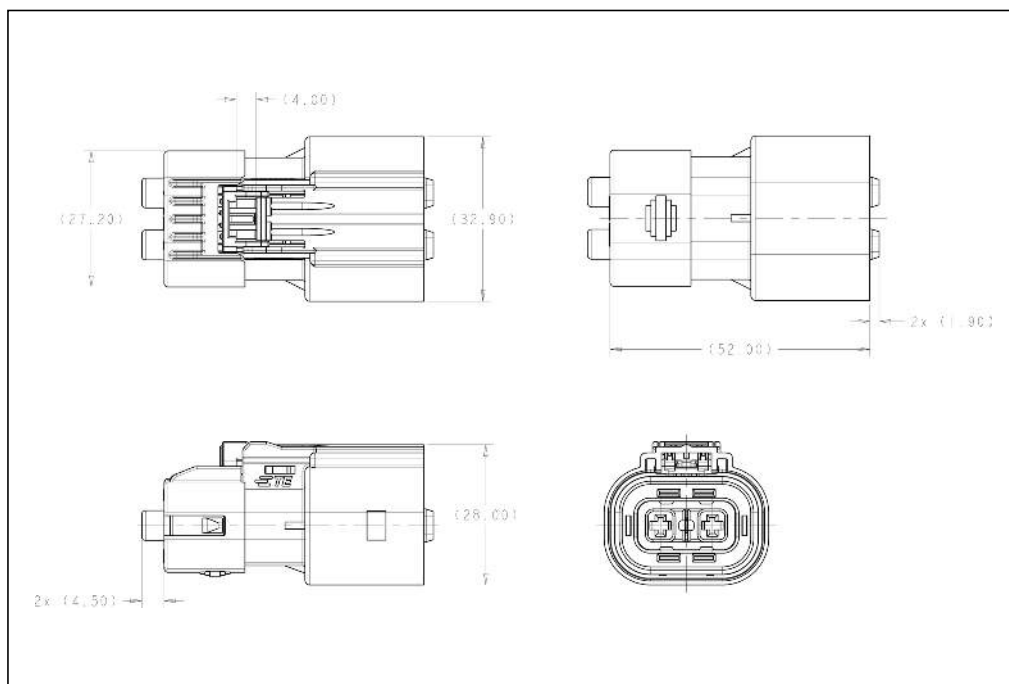108-32020

Application Specification:
114-13310

Drawing 2103163 * and 2103436*

* Drawing Number is NOT the Order Number!

Technical Features

Pin number:
2 HVIL only

Operation temperature:
-40 °C to 125 °C

IP rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Latch Access Type:
Finger accessible

CPA:
With

Fire classification:
HB

Vibration Level:
AK Severity 2 (body-sealed)

Shielding:
360 deg

Available Keys:
Z

Product Specification:
108-2394

Application Specification:
114-13259

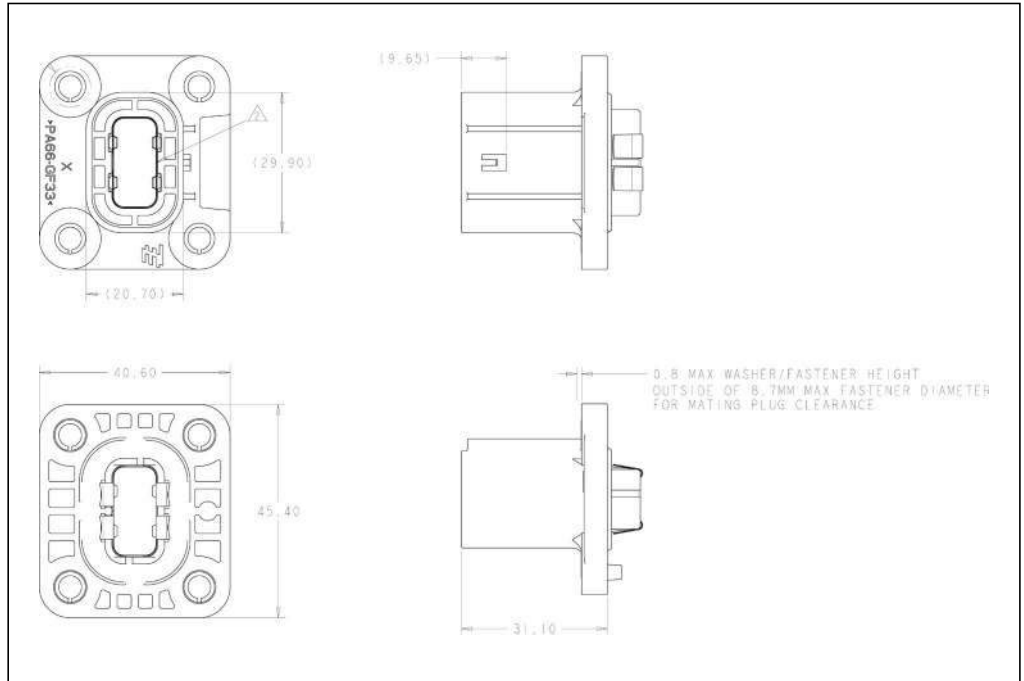### AMP+ HVA 280 - 2 pxx Intelligent Plug (Single Click)

Drawing 2103744 *

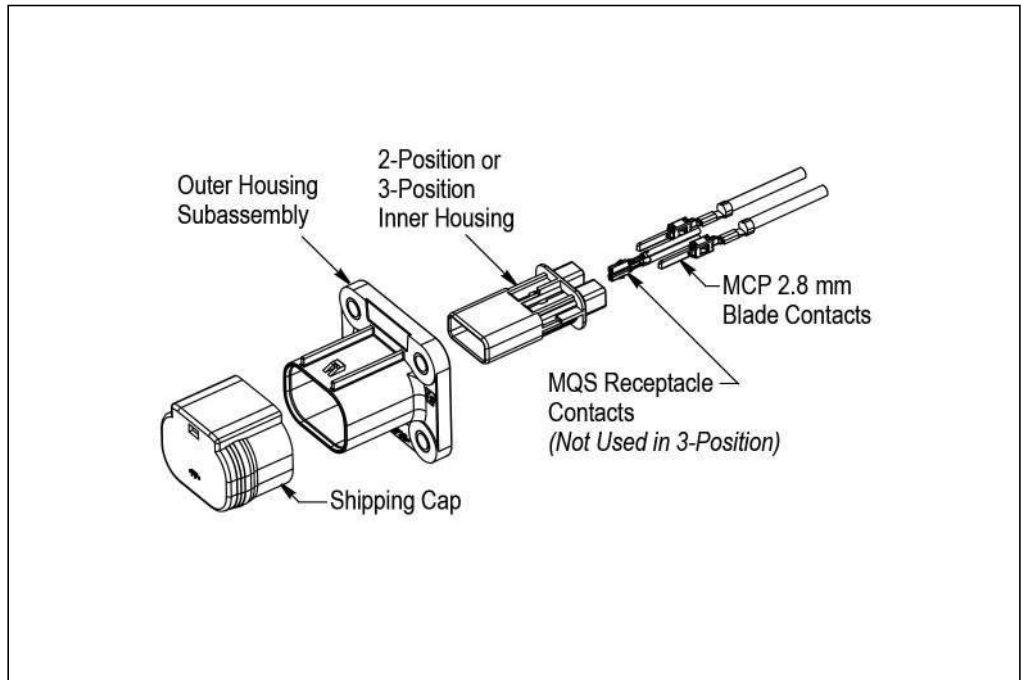* Drawing Number is NOT the Order Number!

Technical Features

Pin Number:
2 (+2 HVIL) or 3

Contact System:
2.8 mm AMP MCP

Voltage Range:
up to 850V DC
(depends on the mating plug)

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
40 A at 85 °C
23 A at 85 °C for 3 positions

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
./.

Fire Classification:
HB

Vibration Level:
V1

Shielding:
360 deg

Available Shielding:
Tin/Silver

Available Keys:
A, B, D, E, F

Product Specification:
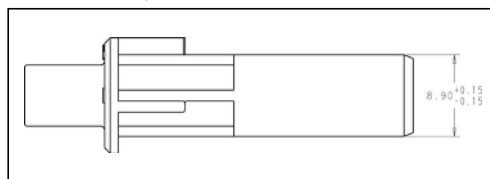108-32045

Instruction Sheet:
408-32095

AMP+ HVA 280 - 2 phi - Plastic (Discrete) - Header 2phi /3pxi
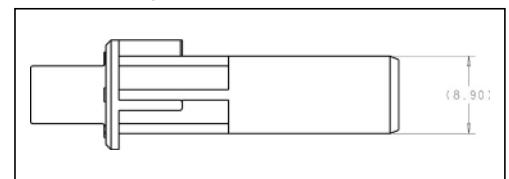

Drawing 2103247 *

3P Inner Housing
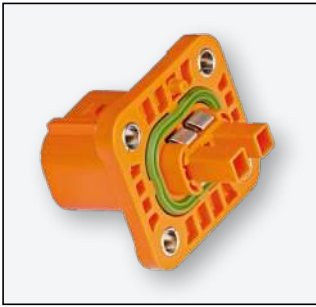

Drawing 2103321 *

2P Inner Housing

Drawing 2103245 *

* Drawing Number is NOT the Order Number!. For interface requirements please refer to product drawing.

Mating Plugs	
2P Header	page 3, 4, 5, 6
3P Header	page 12, 13

AMP+ HVA 280 - 2 phx - Plastic (1-piece) - Header

Drawing 2103124 *

Technical Features

Pin Number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP contact system

Voltage Range:
up to 850V DC
(depends on the mating plug)

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
40A at 85 °C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Fire Classification:
HB

Vibration Level:
AK Severity 2 (Body-Sealed)

Shielding:
360 deg

Available Shielding:
Tin/Silver

Available Keys:
A,B,D,E,F

Product Specification:
108-32020

Instruction Sheet:
408-10441
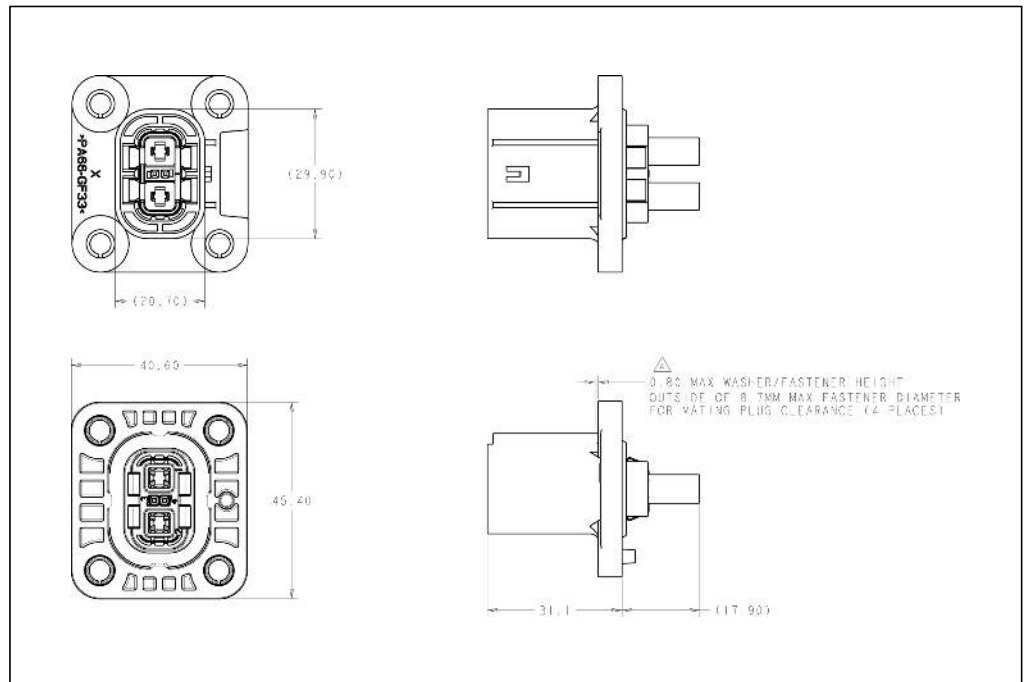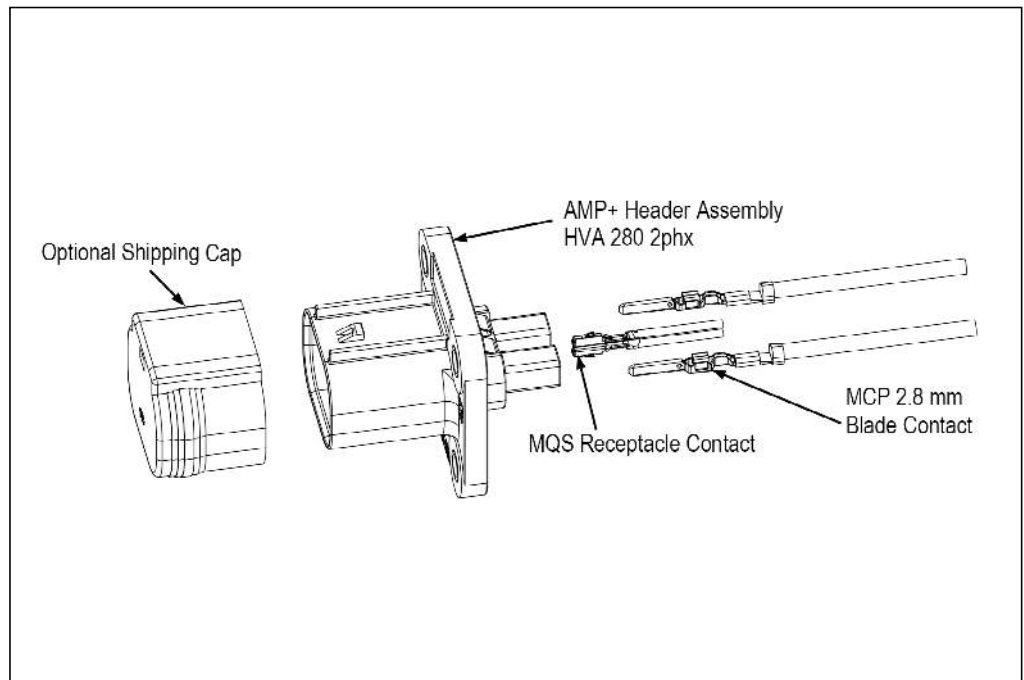
Mating Plugs
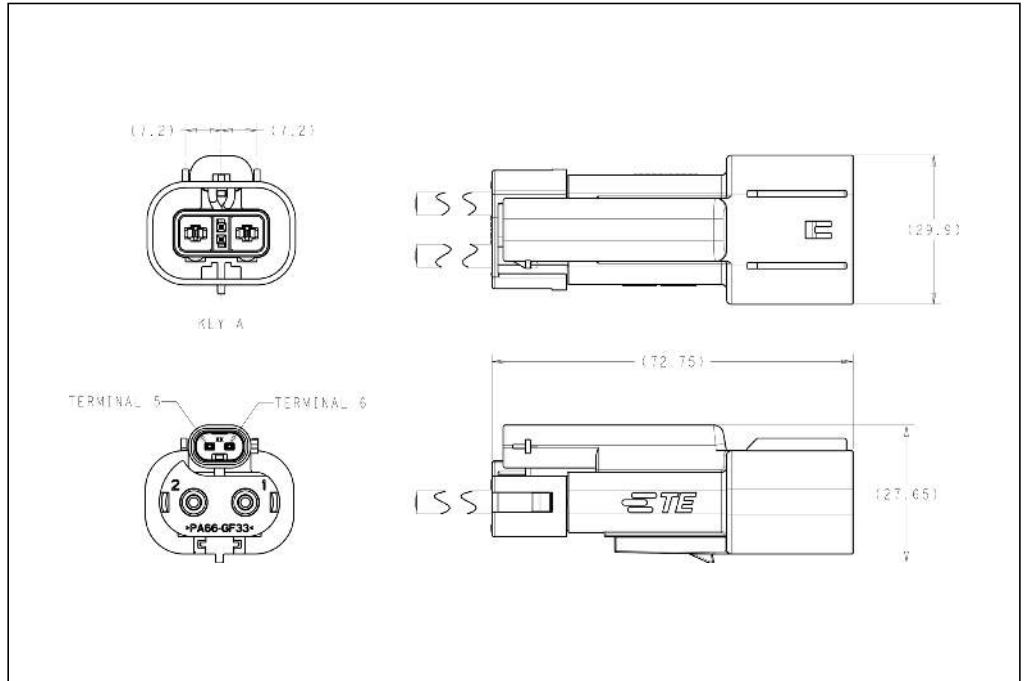
* Drawing Number is NOT the Order Number! For interface requirements please refer to product drawing.

Technical Features
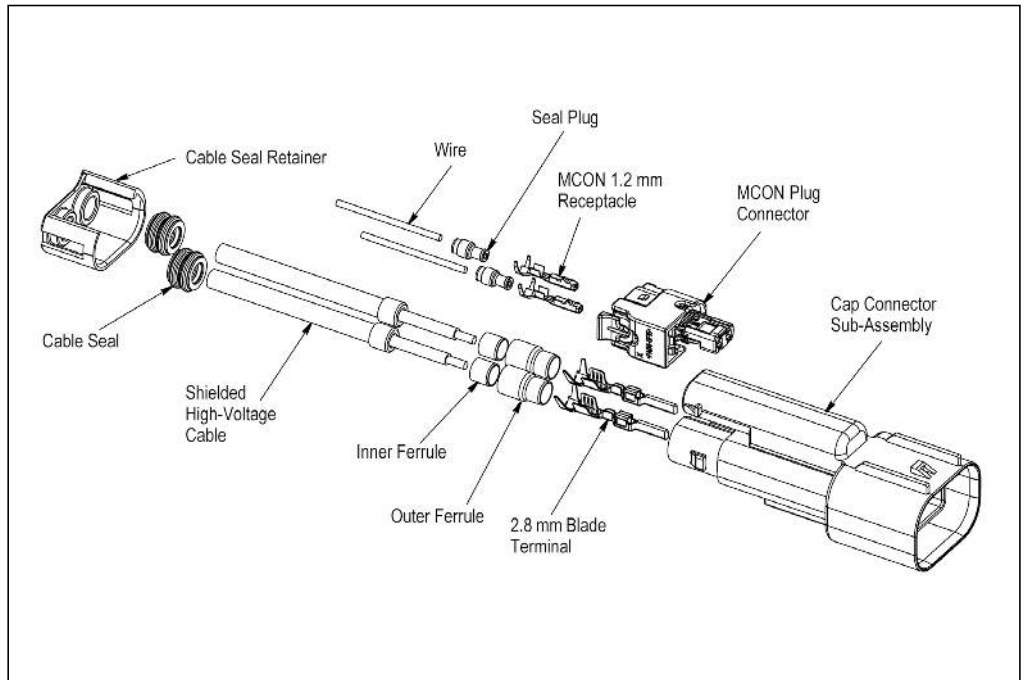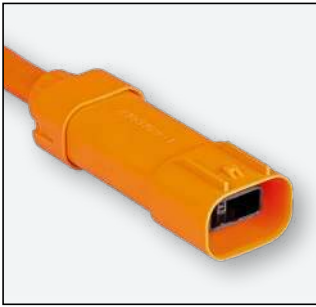
Pin Number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP contact system

Conductor Cross-sections:
2 x 3.0 mm^2 or 2 x 4.0 mm^2

Voltage Range:
600 V

Operation Temperature:
-40 °C up to 125 °C

Current Carrying Capacity:
40A at 85 °C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, external

Fire Classification:
HB

Vibration Level:
V1

Shielding:
360 deg

Available Keys:
A, B, D, E, F

Product Specification:
In progres

Application Specification:
114-32033

AMP+ HVA 280 - 2 phi - Inline Cap

Drawing 2103220 / 2103221 *

* Drawing Number is NOT the Order Number!

Technical Features

Pin Number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP contact system

Conductor Cross-sections:
2 x 4.0 mm^2 + 2 x 0.5 mm^2,
multi-core shielded

Voltage Range:
850 VDC

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
33 A at 85°C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
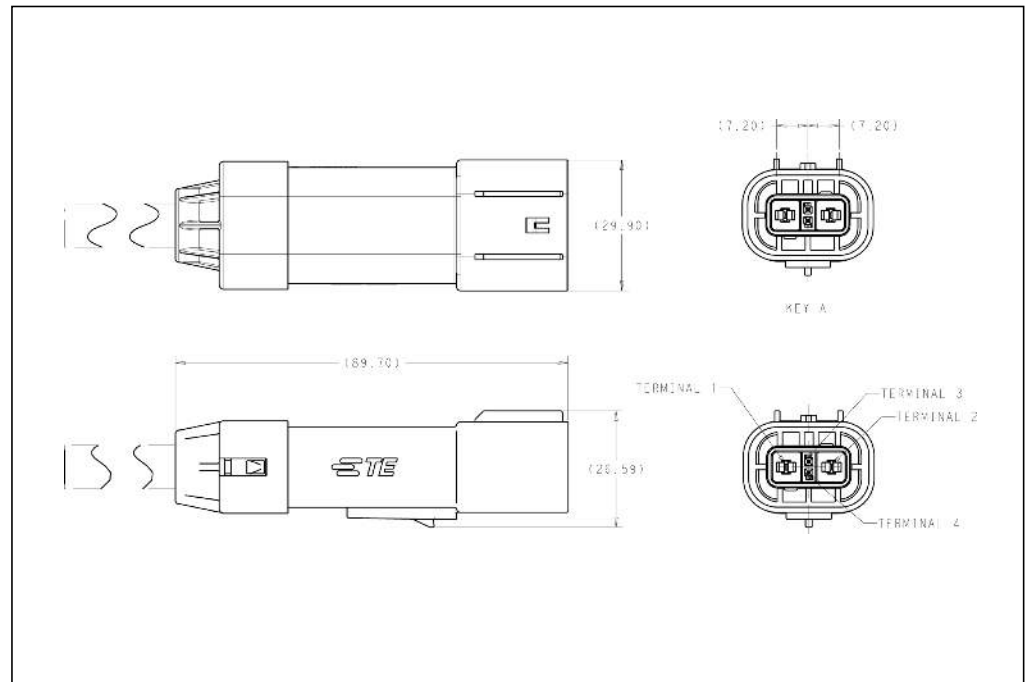Integrated, internal

Fire Classification:
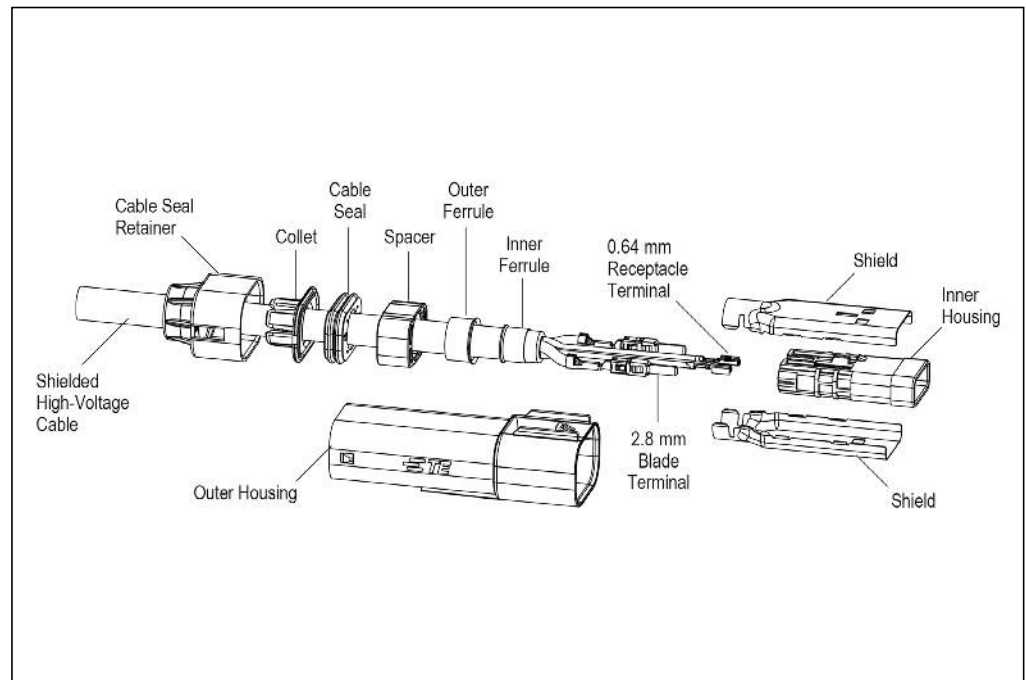HB

Vibration Level:
V1

Shielding:
360 deg

Available Keys:
A, B, D, E, F

Application Specification:
114-32034

AMP+ HVA 280 - 2 phm - Inline Cap
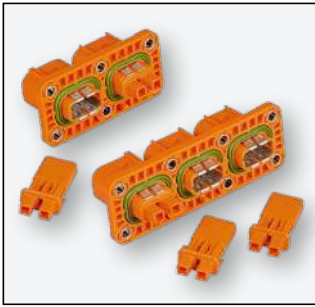

Drawing 2103219 *

* Drawing Number is NOT the Order Number!

AMP+ HVA 280 – 2phi/3pxi Multi-Bay Plastic (Discrete) Header

Technical Features

Pin Number:
For 2-bay header   2x (2+2 HVIL) or 6
(depends on selection
of inner housing
For 3-bay header   3x (2+2 HVIL) or 9
(depends on selection
of inner housing)

Contact System:
2.8 mm AMP MC

Conductor Cross-Sections:
4 mm^2

Voltage Range:
up to 850V DC
(depends on the mating plug)

Operation Temperature:
-40°C up to +125 °C

Current Carrying Capacity:
up to 40 A @ 85 °C
(depends on the mating plug)

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
./.

Fire Classification:
HB

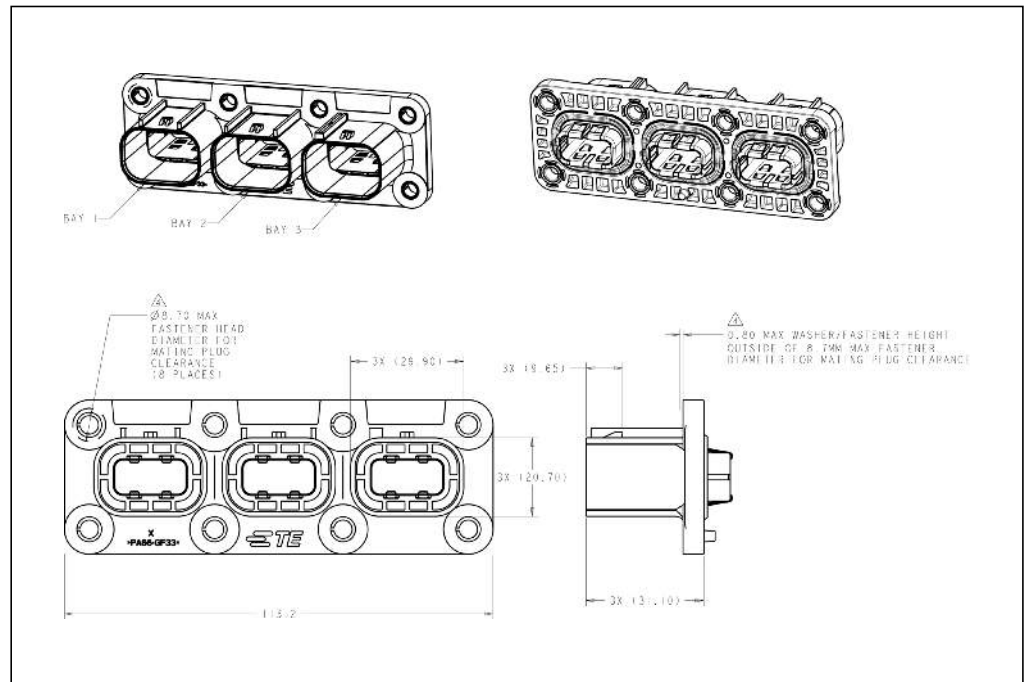**Vibration Level:**
V1

Shielding:
360 deg

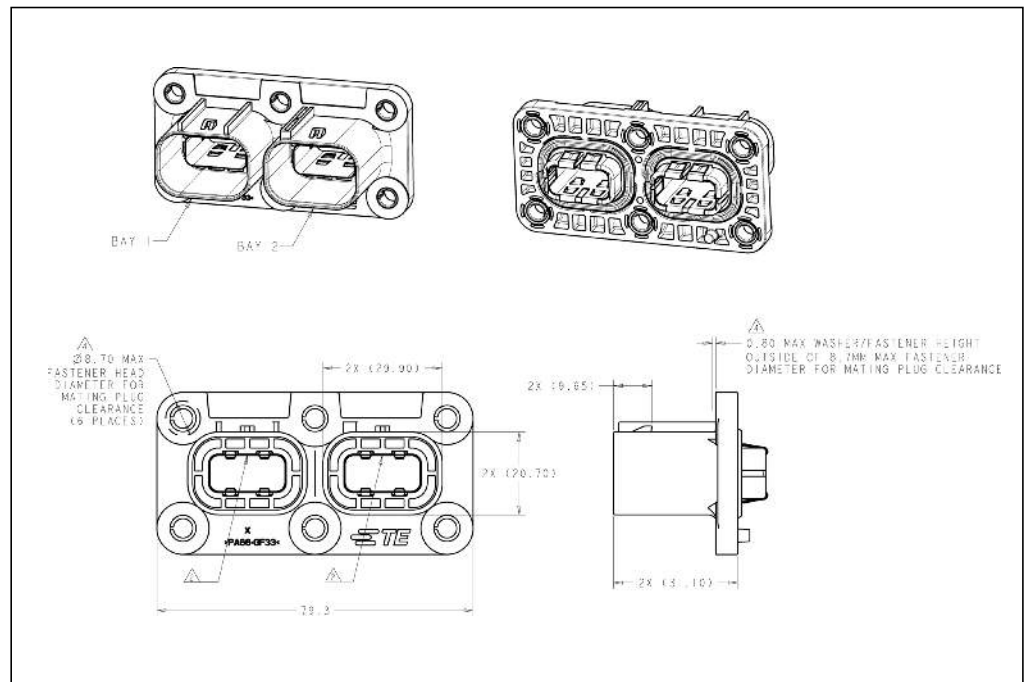**Available Keys:**
For 2 bay header
Option 1   A, E
Option 2   D, F
For 3 bay header
A, D, E

Inner Housing
For 2 positions   2103245-X
For 3 positions   2103321-X
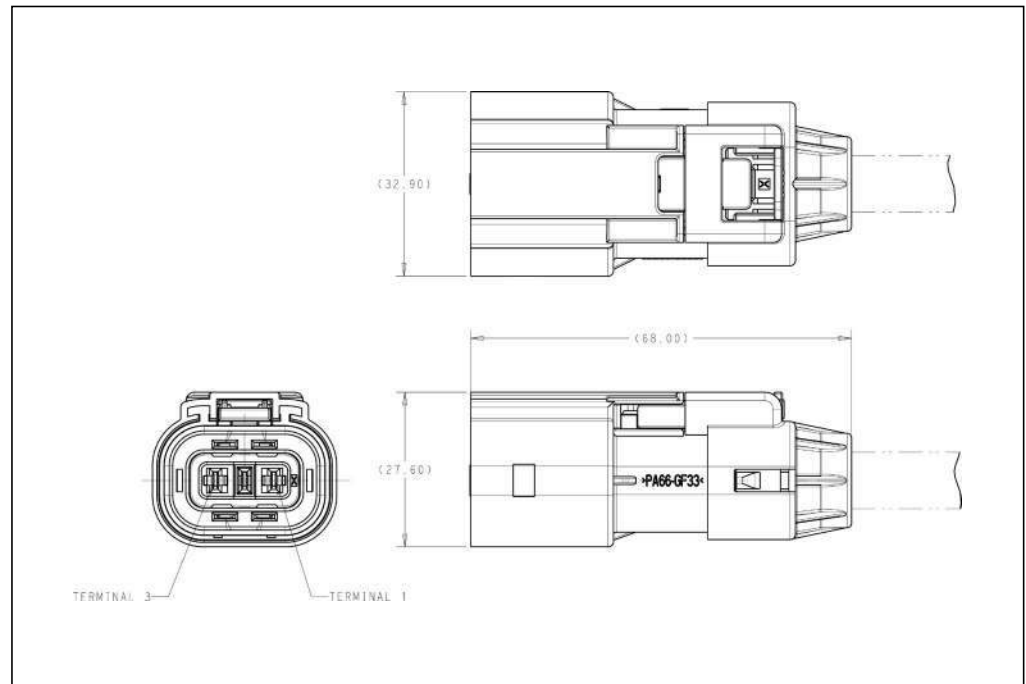

Drawing 2103340 *

Drawing 2103346 *

Mating Plugs	
2P Header	page 3, 4, 5, 6
3P Header	page 12, 13

* Drawing Number is NOT the Order Number! For interface requirements please refer to product drawing.

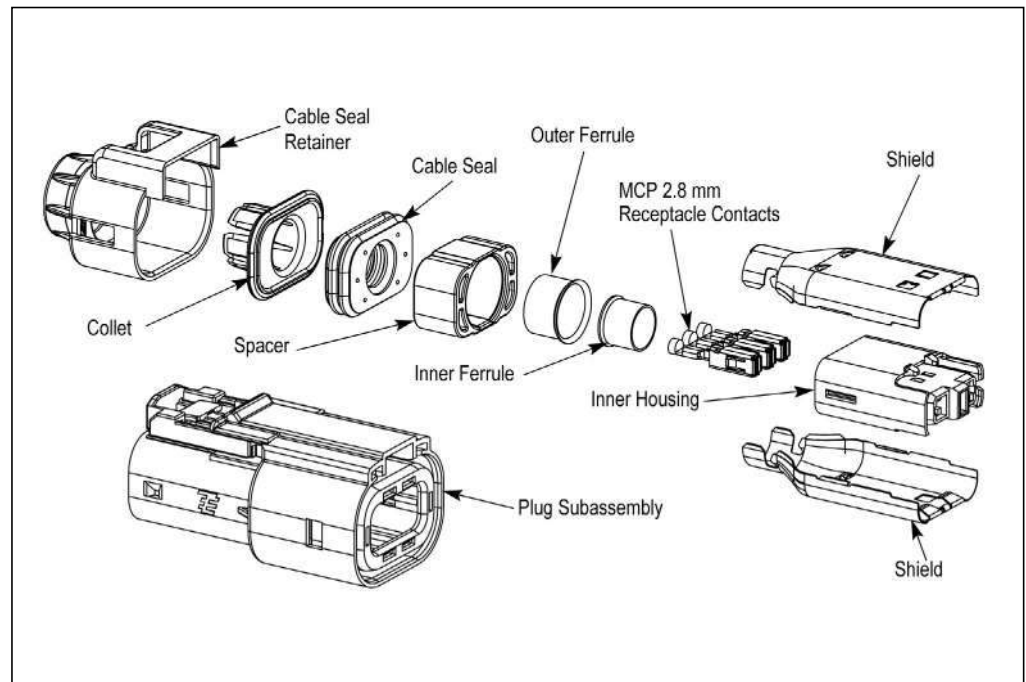## Technical Features

Pin Number:
3

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
2 x 4.0 mm² + 3 x 2.5 mm²,
multi-core shielded

Voltage Range:
850V DC

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
24 A @ 85°C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2xB

HVIL:
./.

Fire Classification:
HB

Vibration Level:
V1

Available Keys:
A, B, D, E, F, and AK Severity 2
(Body-Sealed)

Product Specification:
108-32020

Application Specification:
114-32056

AMP+ HVA 280 3PXM – XE Plug

Drawing 2103309 *

* Drawing Number is NOT the Order Number!

Technical Features

Pin Number:
3

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
2 x 4.0 mm² + 3 x 2.5 mm²,
multi-core shielded

Voltage Range:
850V DC

Operation Temperature:
 -40 °C up to 140 °C

Current Carrying Capacity:
24 A @ 85°C

IP Rating:
Plugged: IP67, IP6k9k
Unplugged: IP2xB

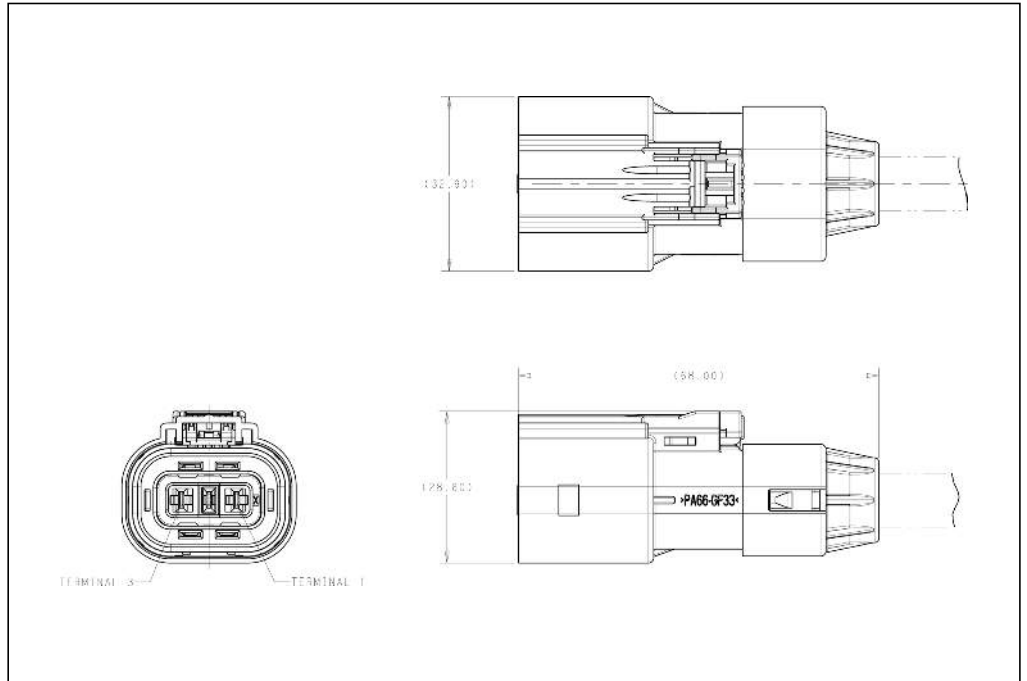**HVIL:**
./.

Fire Classification:
HB

Vibration Level:
V1

Available Keys:
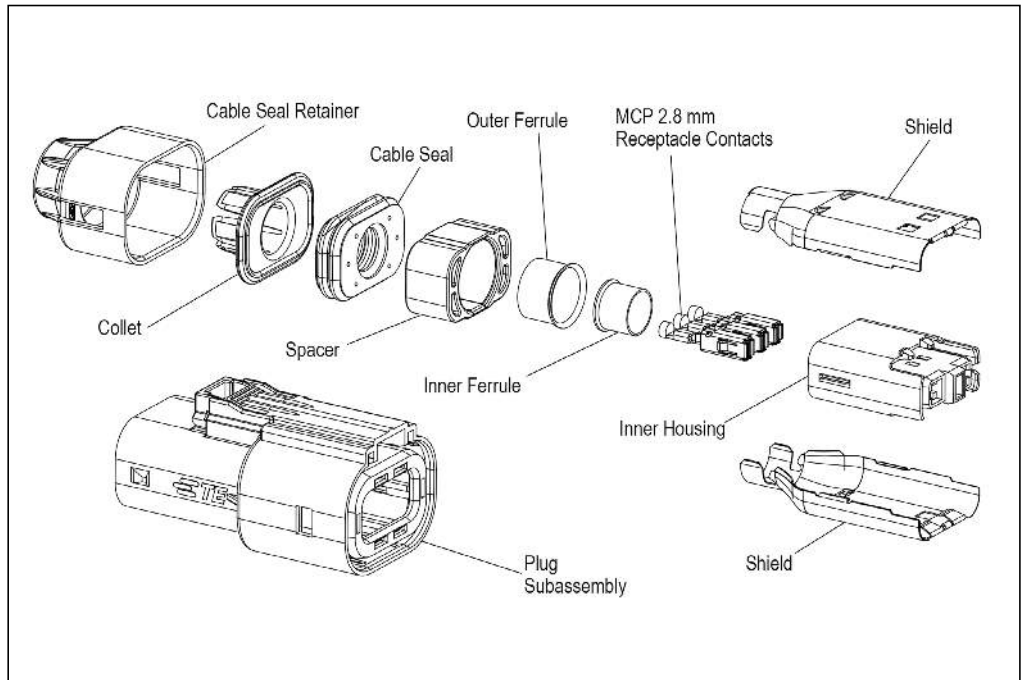A, B, D, E, F

Product Specification:
108-32077

Application Specification:
114-32125

AMP+ HVA 280 3PXM – XE Plug (Single Click)

Drawing 2103533 *

* Drawing Number is NOT the Order Number!

Technical Features

Pin Number:
2(+2 HVIL)

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
2x4.0 mm² + 2x0.5 mm²,
mult-core shielded

Voltage Range:
850V DC

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
33A at 85 °C

IP rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Fire Classification:
HB

Vibration Level:
AK Severity 2 (body-sealed)
and V1

Product Specification:
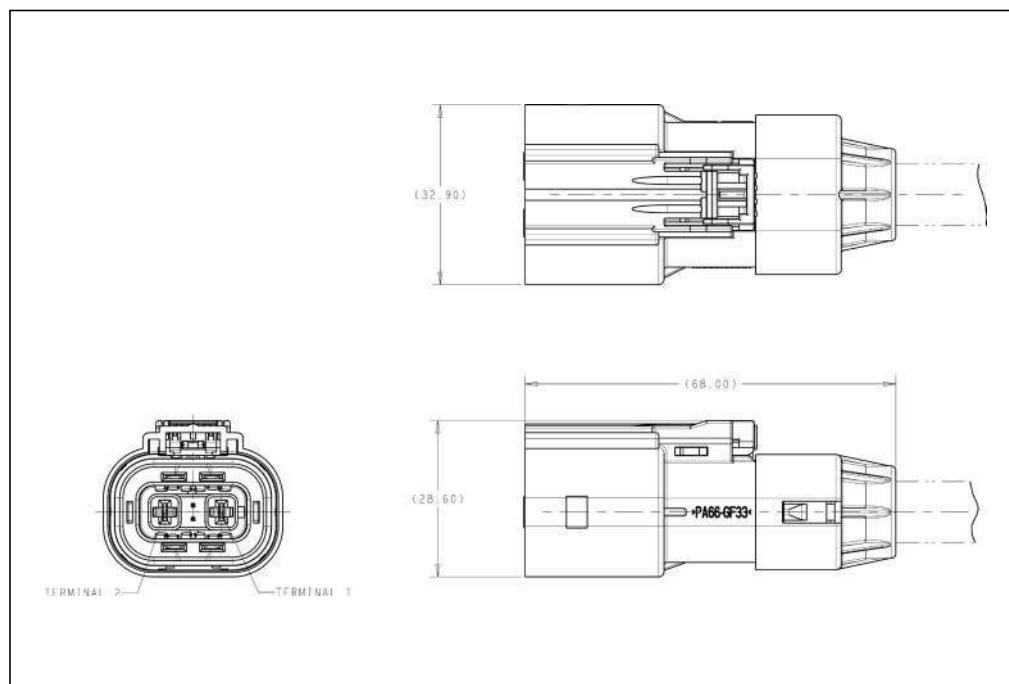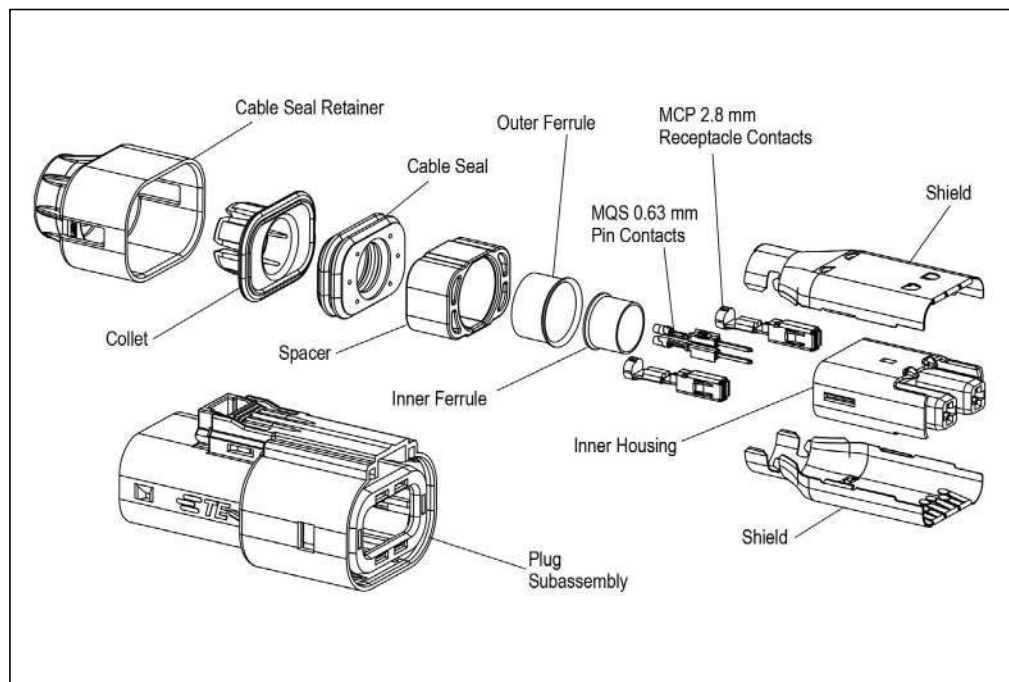108-32077

Application Specification:
114-32124

Available Keys:
A, B, D, E, F

AMP+ HVA 280 2PHM Pass-Through Plug (Single Click)
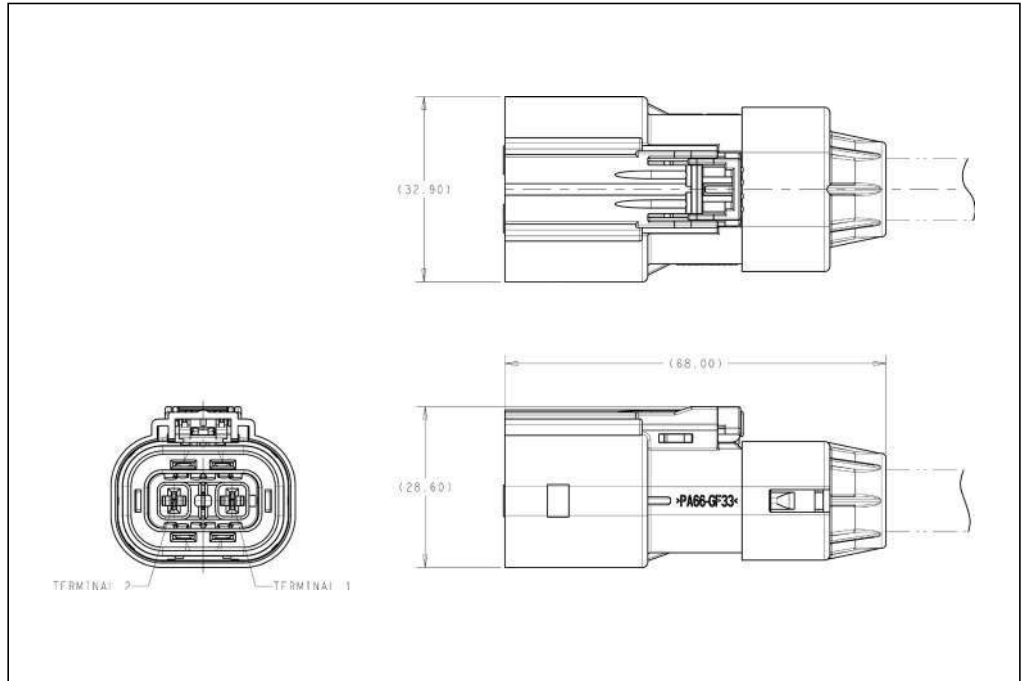

Drawing 2103531 *

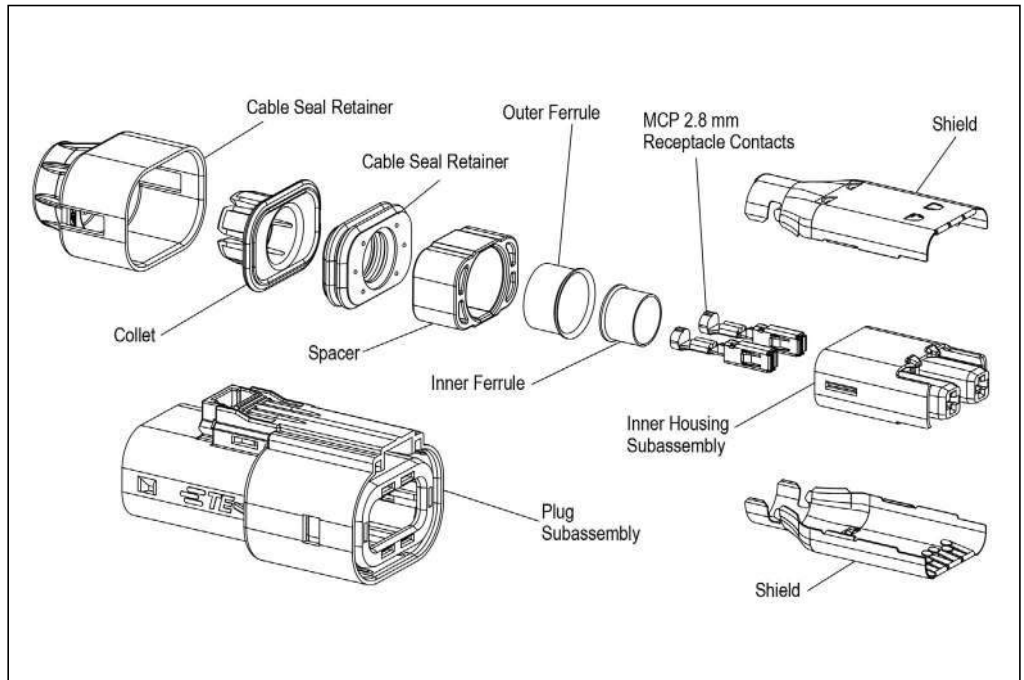* Drawing Number is NOT the Order Number!

Technical Features

Pin Number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
2x4.0 mm², multi-core shielded

Voltage Range:
850V DC

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
33A at 85 °C

IP rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Fire Classification:
HB

Vibration Level:
AK Severity 2 (body-sealed)
and V1

Product Specification:
108-32077

Application Specification:
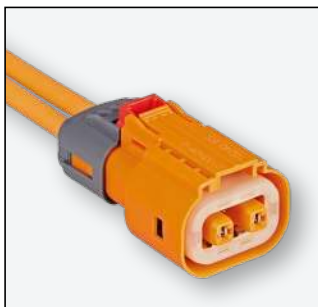114-32123

Available Keys:
A, B, D, E, F

AMP+ HVA 280 2PHM Shunted Plug (Single Click)

Drawing 2103532 *

* Drawing Number is NOT the Order Number!

AMP+ HVA 280 2PHI XE Plug

Drawing 2103749 *

Technical Features

Pin Number:
2 (+2 HVIL)

Contact System:
2.8 mm AMP MCP

Conductor Cross-Sections:
3.0 mm² and 4.0 mm²,
individually shielded

Voltage Range:
600V DC

Operation Temperature:
-40 °C up to 125 °C

Current Carrying Capacity:
40A at 85 °C

IP rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Fire Classification:
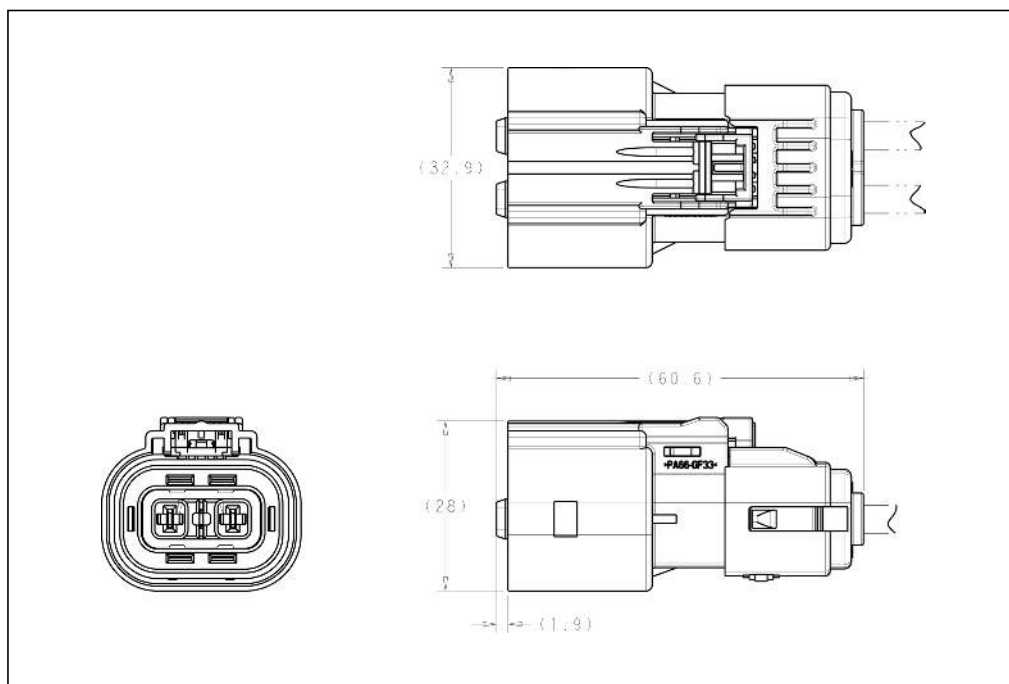HB

Vibration Level:
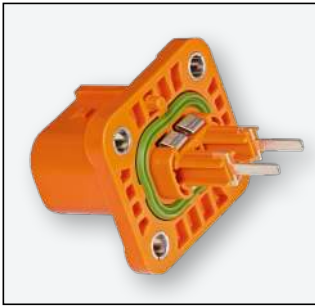V1

Product Specification:
tbd

Application Specification:
tbd

Available Keys:
A, B, D, E, F, G

* Drawing Number is NOT the Order Number!

Technical Features

Pin Number:
2 (+2 HVIL)

Contact System:
2.8mm AMP MCP

Conductor Cross-Sections:
4 mm²

Tab Size:
0.8 x 2.8 mm

Voltage Range:
up to 850V DC
(depends on the mating plug)

Operation Temperature:
-40 °C up to 140 °C

Current Carrying Capacity:
40A at 85 °C

IP rating:
Plugged: IP67, IP6k9k
Unplugged: IP2XB

HVIL:
Integrated, internal

Fire Classification:
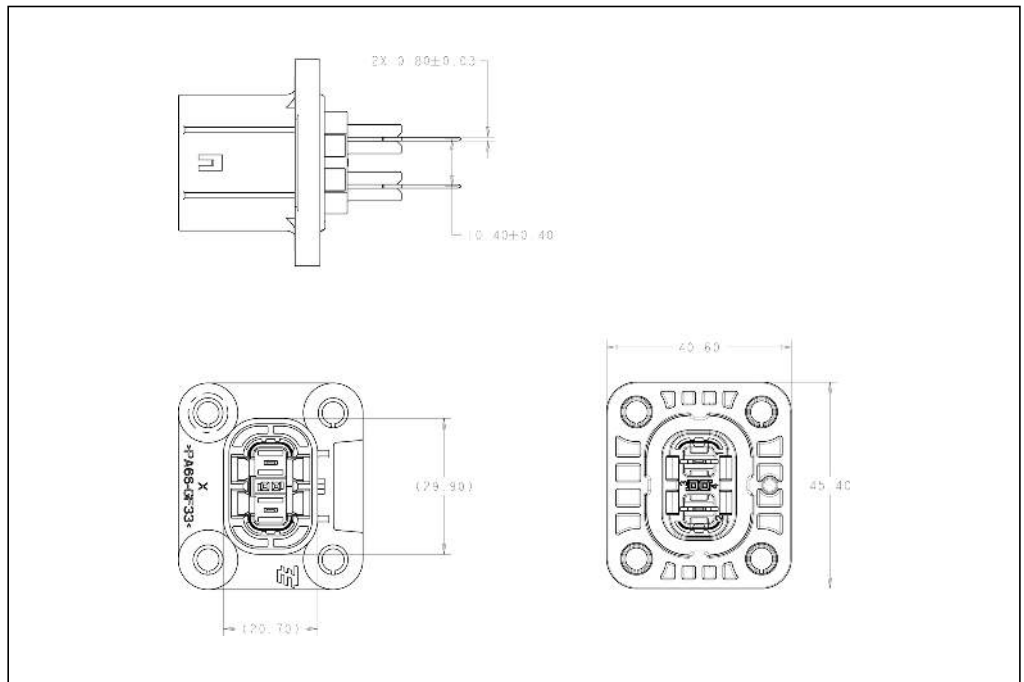HB

Vibration Level:
V1

Product Specification:
tbd

Application Specification:
408-10441

Available Keys:
A, B, D, E, F

AMP+ HVA 280 2P Header – Stitched
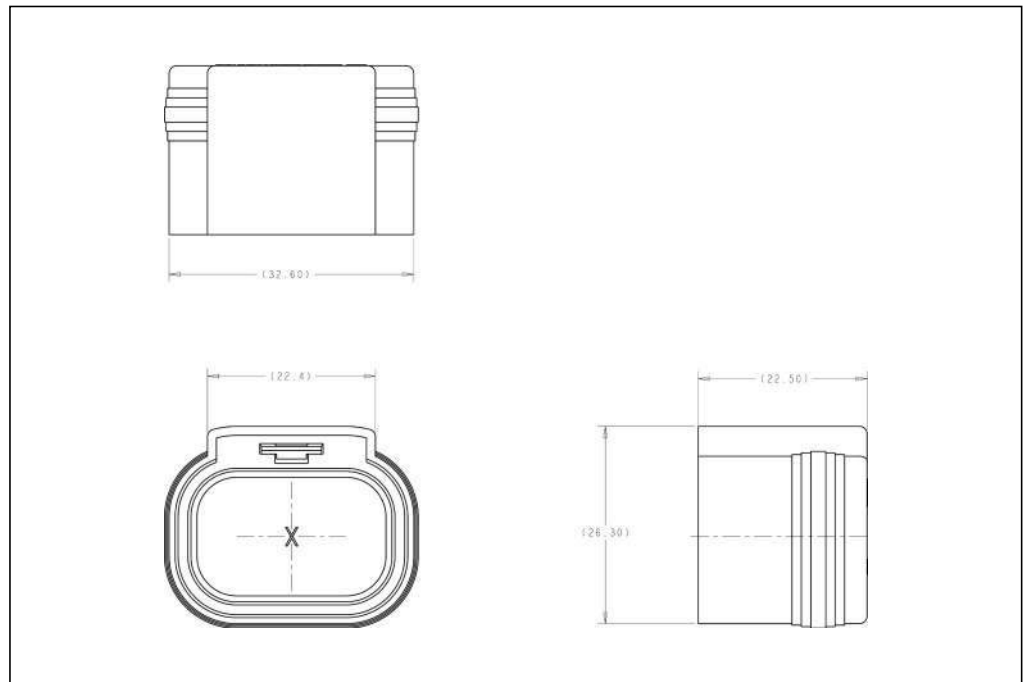

Drawing 2103396 *

* Drawing Number is NOT the Order Number!

AMP+ HVA 280 Shipping Caps

Drawing 1587733 *
Shipping caps fit TE standard headers

* Drawing Number is NOT the Order Number!