



AMPHENOL PCD SHENZHEN



EXCEL | MATE

EXCEL | MATE PLUS

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PRODUCT INTRODUCTION



When high-performance and increased safety are required in HEV, Amphenol PCD's **EXCEL | MATE** connectors fulfill the challenge.

HVSL Series is designed for various HEV applications, including power and signal interconnect solutions. Different versions are available, from 1 position to 6 positions and a rated current from 23A to 350A.

Product	HVSL 1200	HVSL 1000	HVSLP 1000	HVSL 800	HVSLP 800	HVSLS 800	HVSLS 8003	HVSLS 600	HVSL 60A	HVSL 63A	HVSL 633	HVSL 28A	HVSL 282	HVSL 362	HVSL 364	HVSL 365	HVSL 366
Position	2	1, 2, 3	2	2, 3	2	2	2	2, 3	1	2	3	3	2	2	4	5	6
Rated Voltage	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V
Rated Current	350A	250A	250A	200A	200A	180A	200A	120A	120A	40A	40A	32A	32A	95A	46A	40A	40A
HVIL	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Shielding	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Shell	Plastic	Plastic	Plastic	Plastic	Plastic	Metal	Metal	Metal	Plastic	Plastic	Plastic	Plastic	Plastic	Plastic	Plastic	Plastic	Plastic
IP67,IP6K9K	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Touch-Proof IP2XB	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Cable size mm ²	70 to 95	25 to 70	50 to 70	25 to 50	25 to 50	25 to 50	25 to 50	16 to 25	25	4 to 6	2.5 to 6	2.5 to 4	2.5 to 4	6 to 16	2.5 to 6	2.5 to 6	2.5 to 6
Cable type shielded wire	I	I	I	I	I	I	I	I	I	M	I	M	I	I	I	I	I

Cable type shielded wire

I: Individually / **M:** Multicore

EXCEL | MATE Plus



High Voltage Safety Lock

EXCEL | MATE Plus offers a max rated voltage up to 1000V and a max rated current of 250A. It can be used for power solutions in various HEV applications.

External HVIL for 1 position and internal HVIL for 2 to 3 positions.

KEY FEATURES

With interlock solution

RADSOK® Technology R4 version 10mm

AK compliance LV215

Sealing, IP67 (mated), IP6K9K

1 to 3 positions available

Touch-proof, IP2XB

Multiple coding positions

APPLICATIONS

HEV Battery

Inverters

Junction boxes

Power distribution boxes

MECHANICAL

Durability ≥ 50 mating cycles

Wire range 25 to 70 mm²

ELECTRICAL

Rated voltage 1000V DC

Rated current 250A Max @ ambient temperature 70°C

Insulator resistance $> 100\text{M}\Omega$

Dielectric withstand voltage 3000V AC

ENVIRONMENTAL

Sealing IP67, IP6K9K (mated)

Touch-proof IP2XB

Temperature range -40°C to 125°C

STANDARDS

USCAR-2

USCAR-37

LV-215

RoHS

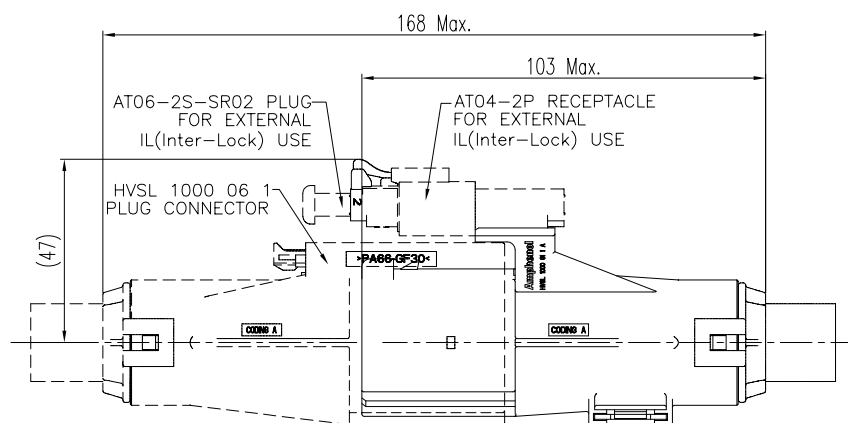
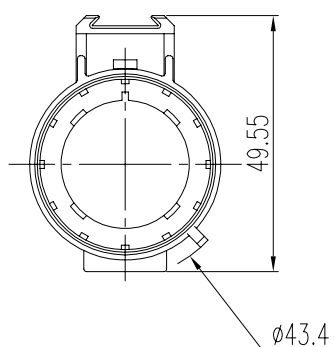
MATERIAL

Contacts Copper alloy with silver plating

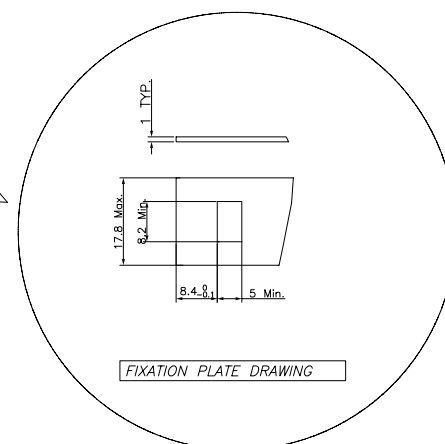
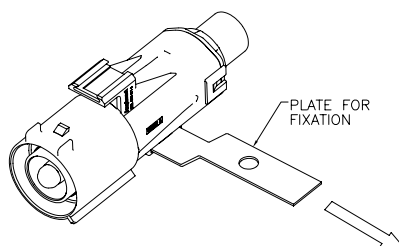
Housing PA66 + GF

Seal SR

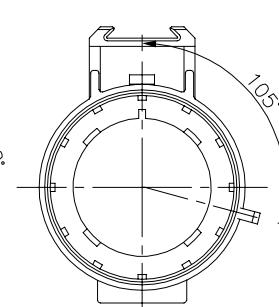
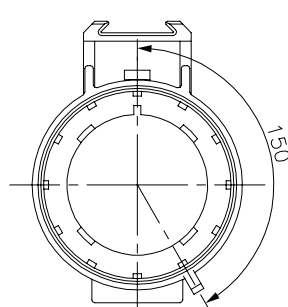
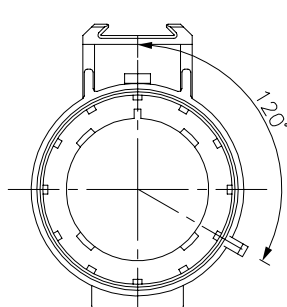
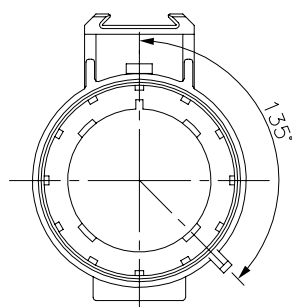
RECEPTACLE IN-LINE



MOUNTED GROOVE

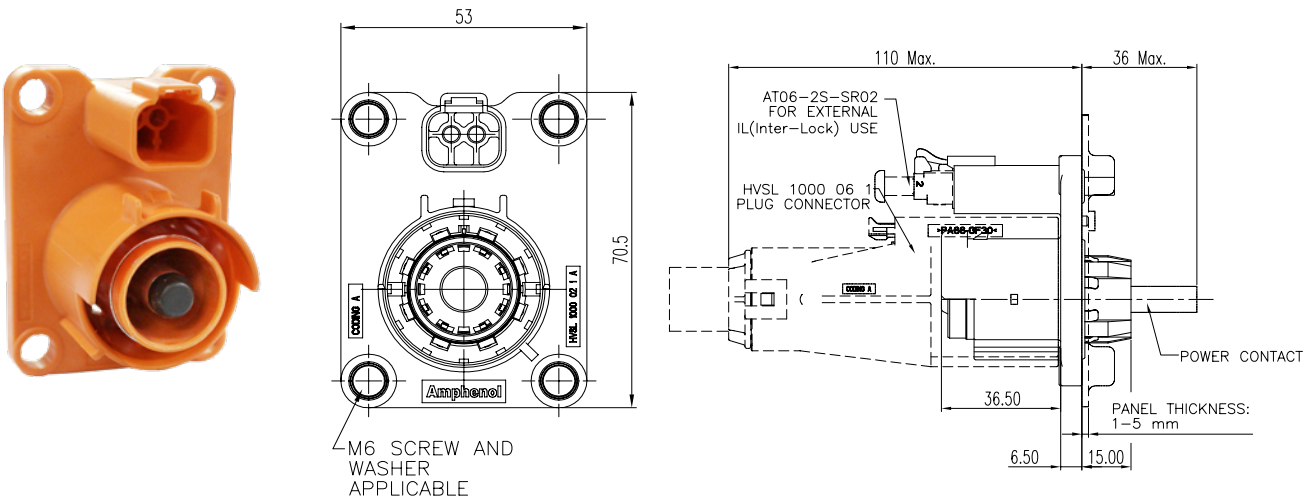


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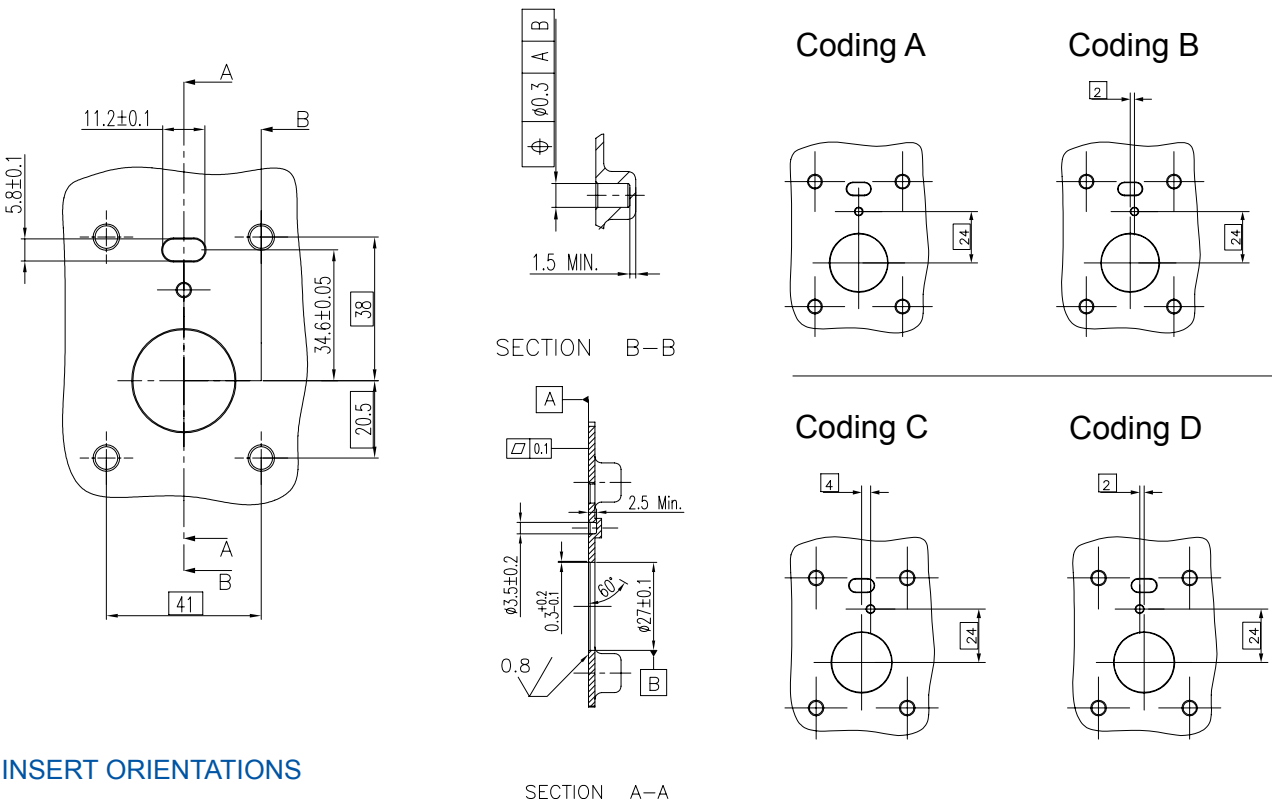


	Coding A	Coding B	Coding C	D 键位
P/N	HVSL1000 01 1 A	HVSL1000 01 1 B	HVSL1000 01 1 C	HVSL1000 01 1 D

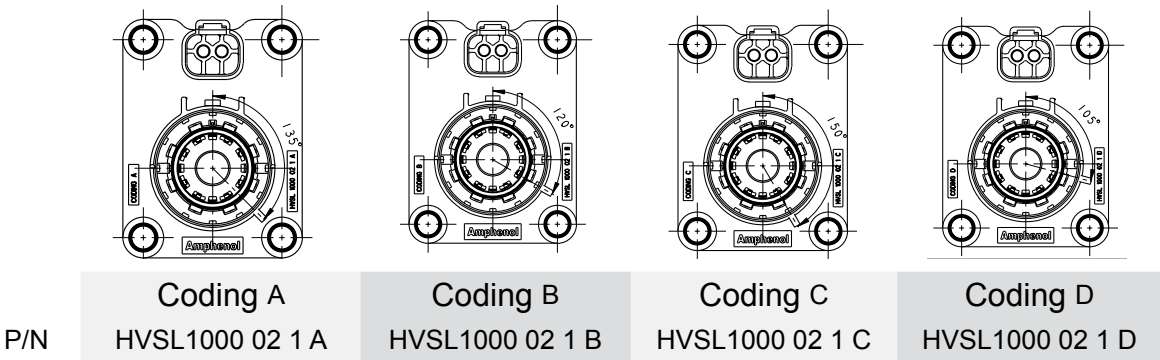
RECEPTACLE BOX MOUNTED



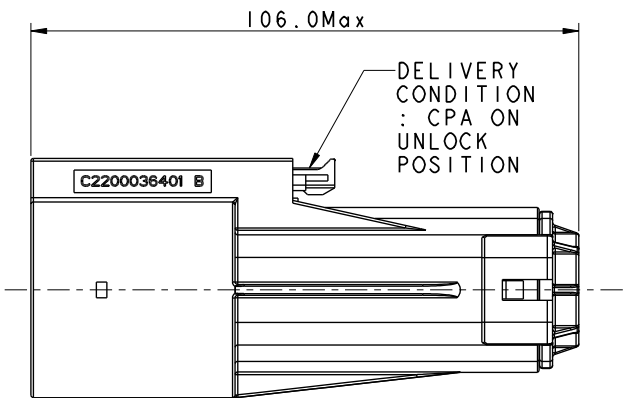
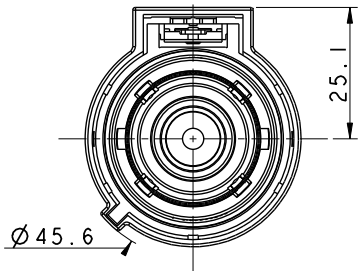
PANEL MOUNTING DIMENSIONS



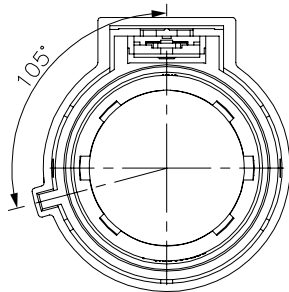
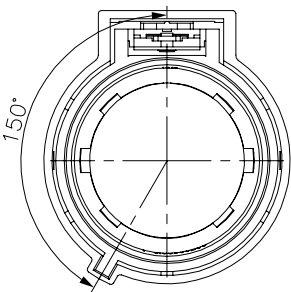
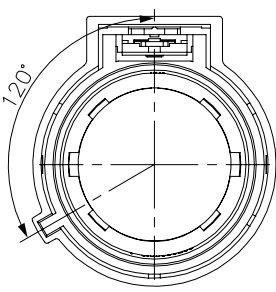
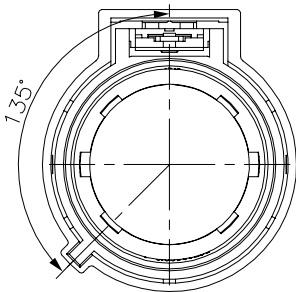
INSERT ORIENTATIONS



PLUG



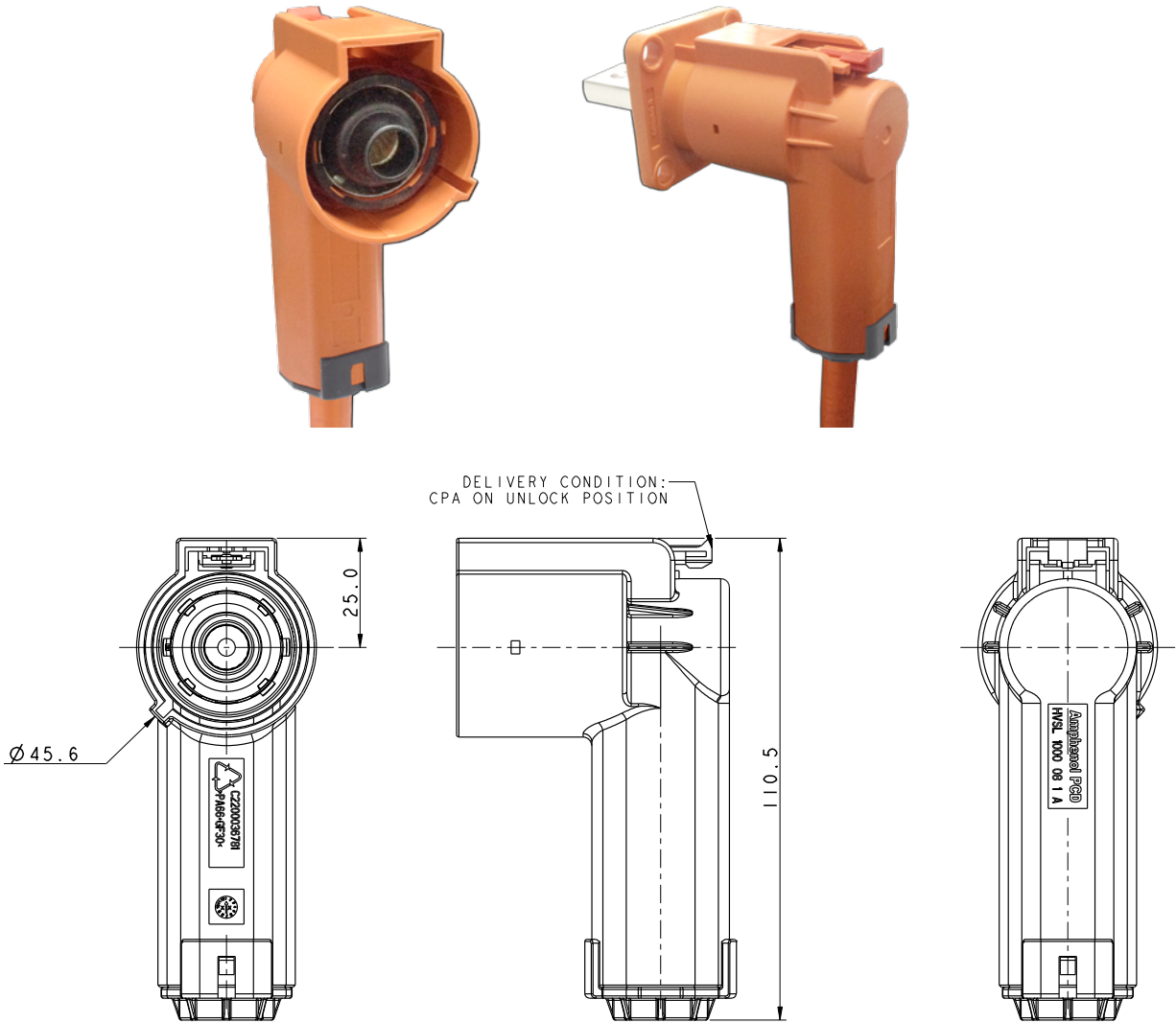
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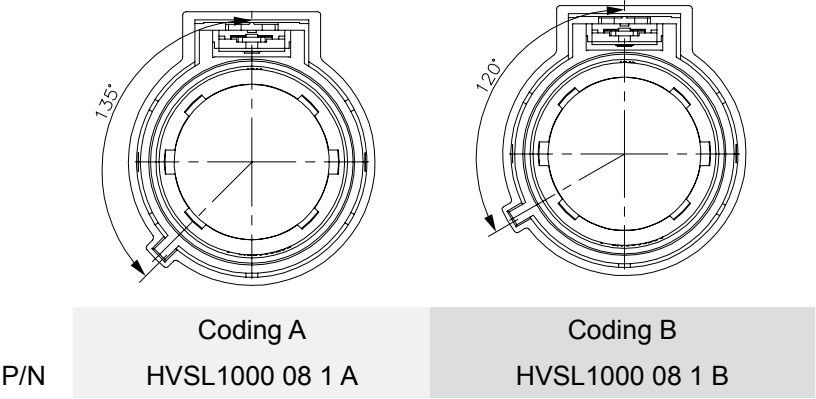
	Coding A	Coding B	Coding C	DCoding D
P/N	HVSL1000 06 1 A	HVSL1000 06 1 B	HVSL1000 06 1 C	HVSL1000 06 1 D

Excel|Mate Plus
(HVSL 1000)

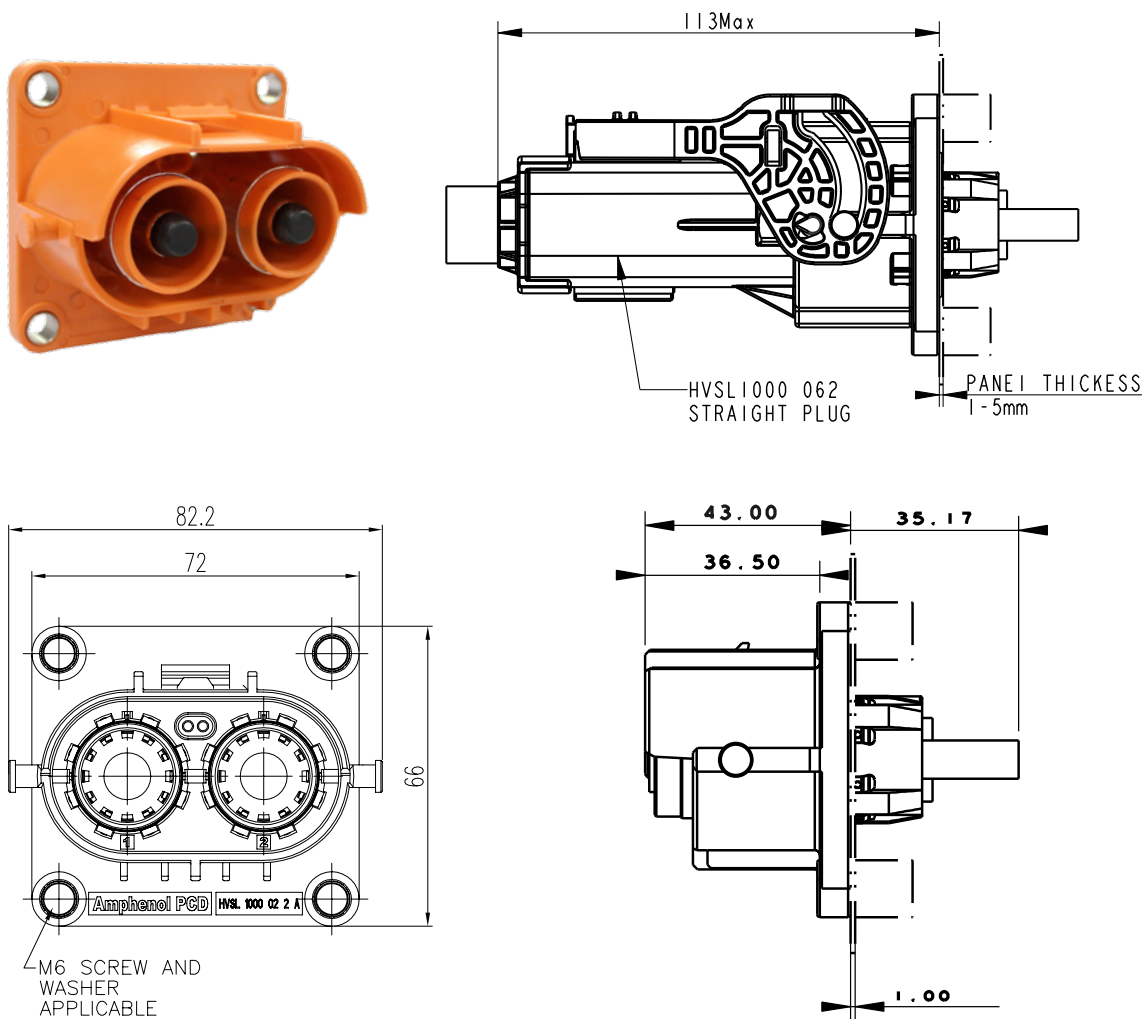
PLUG RIGHT ANGLE



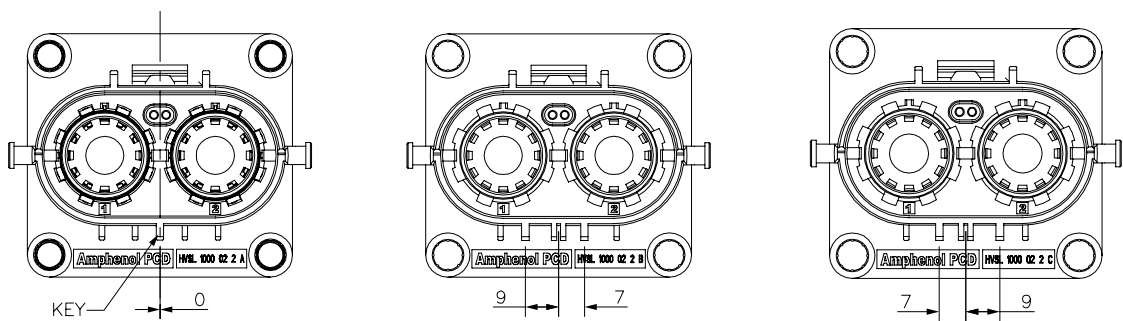
INSERT ORIENTATIONS



2 PIN RECEPTACLE BOX MOUNTED

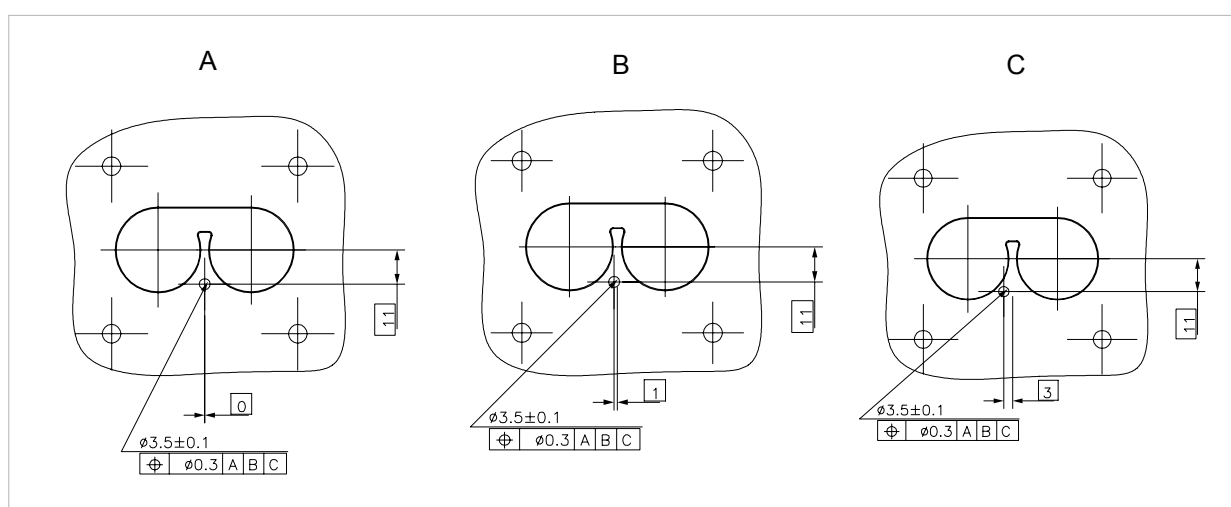
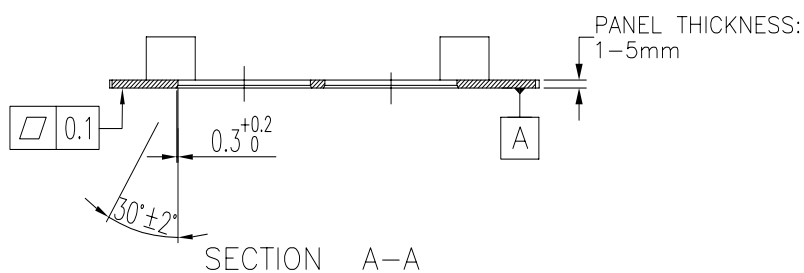
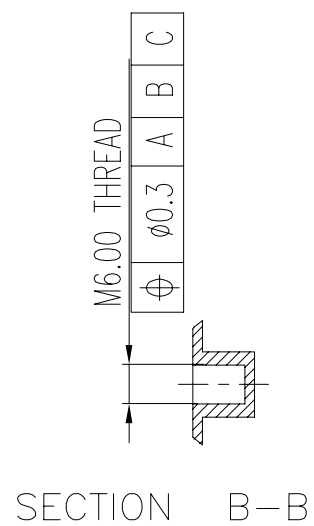
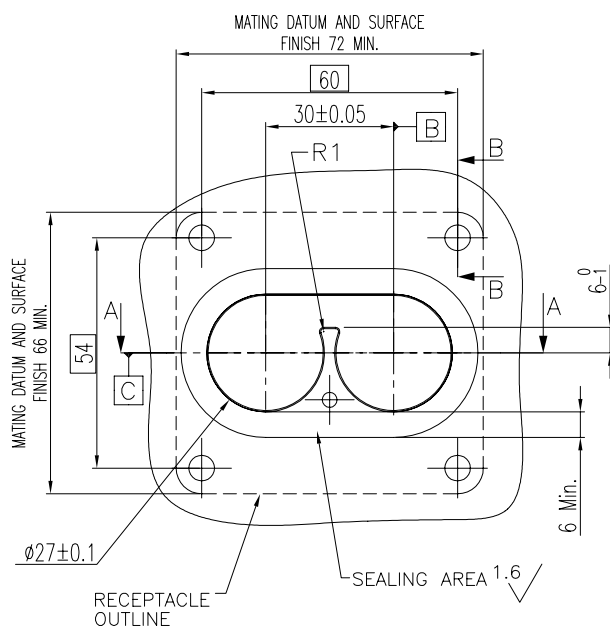


INSERT ORIENTATIONS

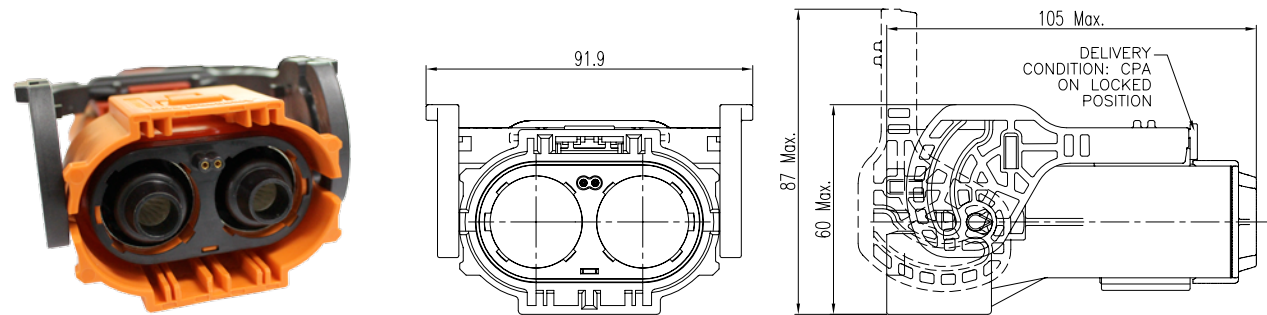


	Coding A	Coding B	Coding C
P/N	HVSL1000 02 2 A	HVSL1000 02 2 B	HVSL1000 02 2 C

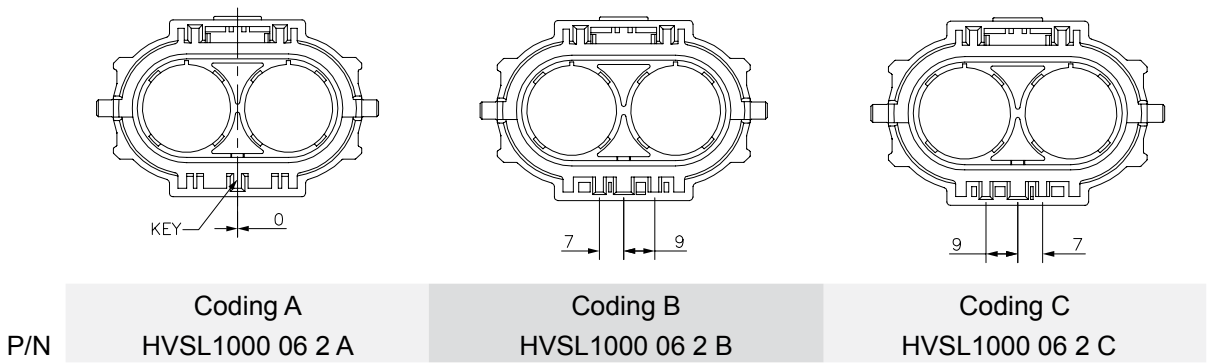
PANEL MOUNTING DIMENSIONS



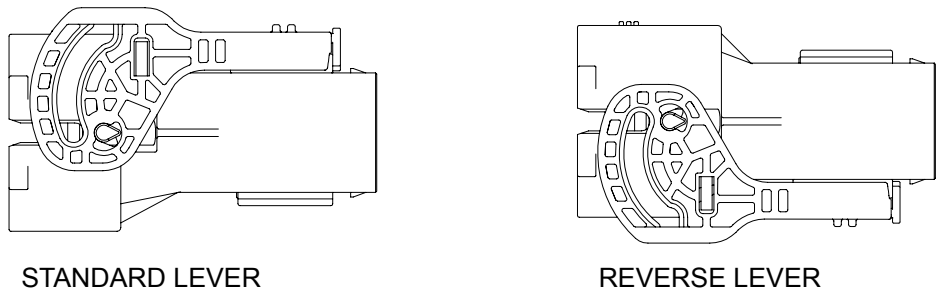
2 PIN PLUG



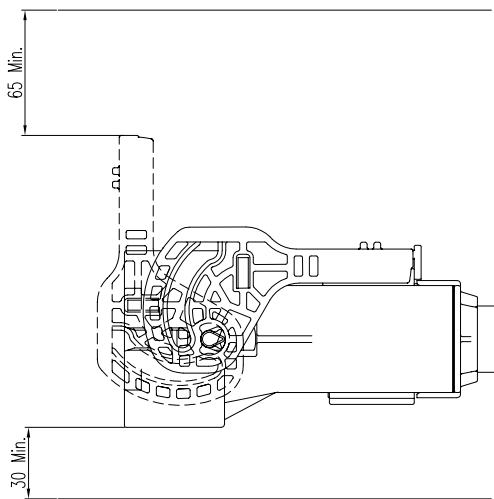
INSERT ORIENTATIONS



LEVER POSITION

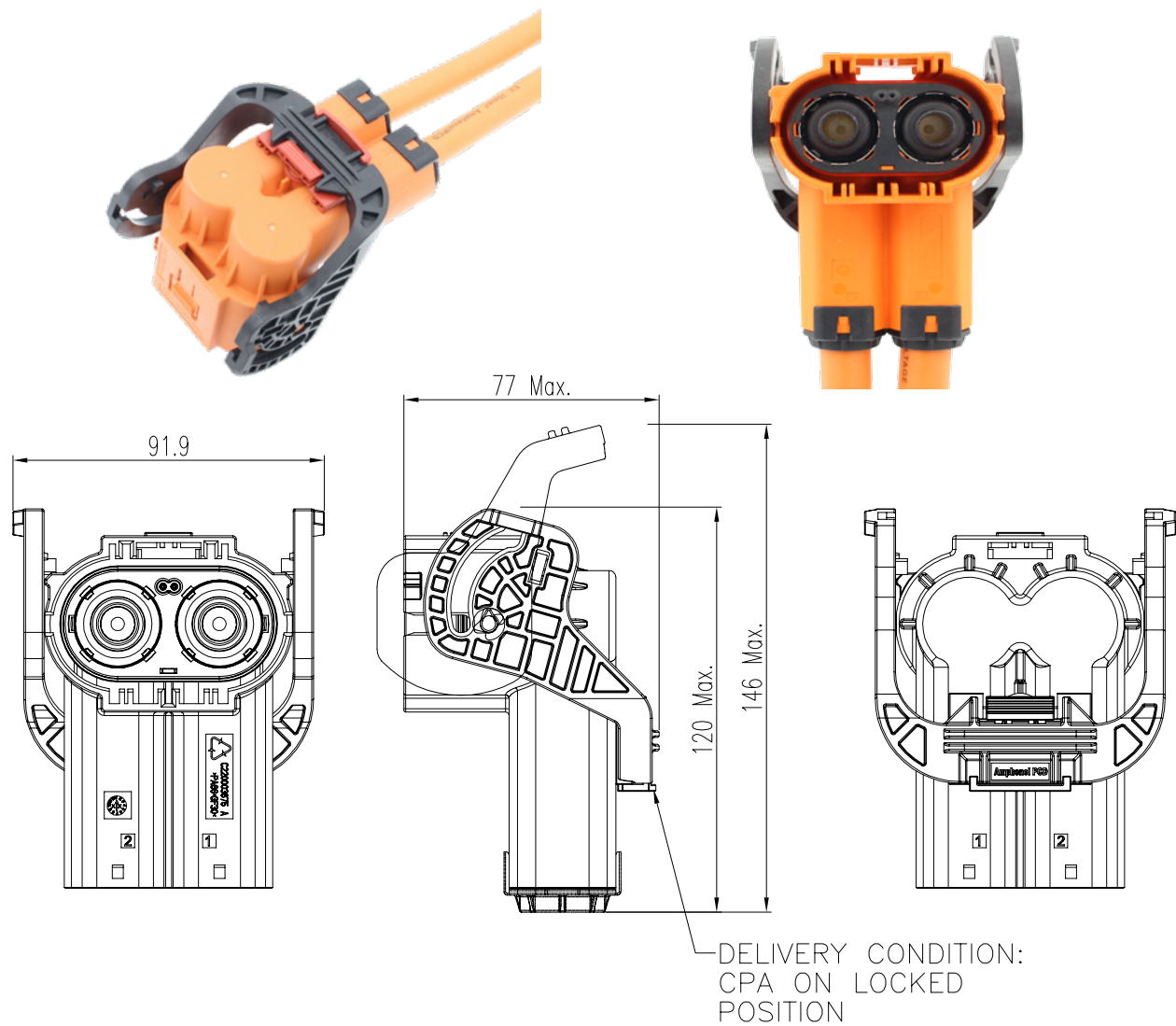


INSTALLATION CLEARANCE

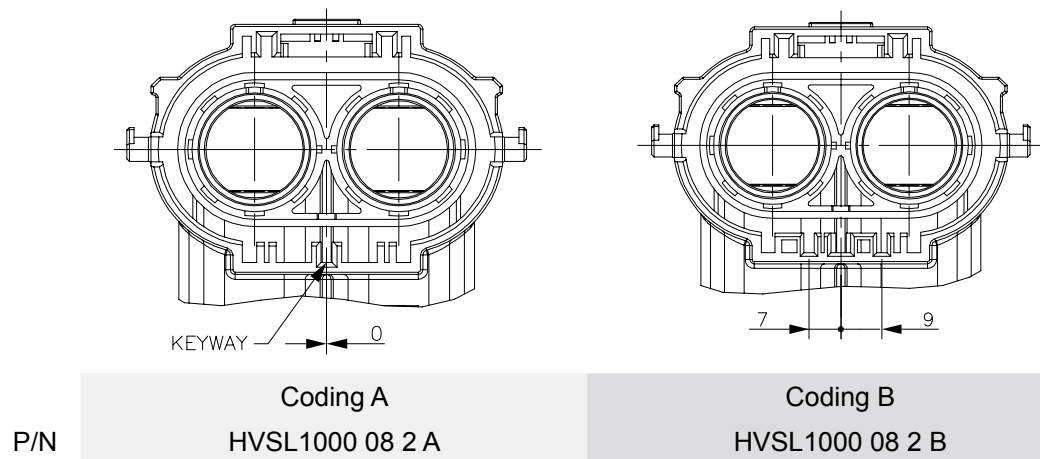


Excel|Mate Plus
(HVSL 1000)

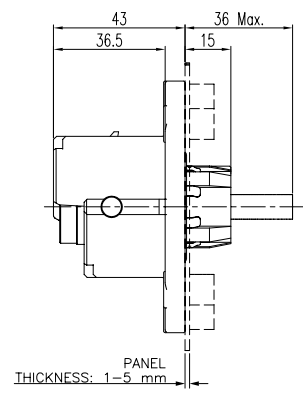
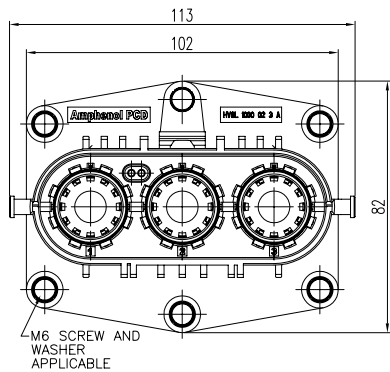
2 PIN PLUG RIGHT ANGLE



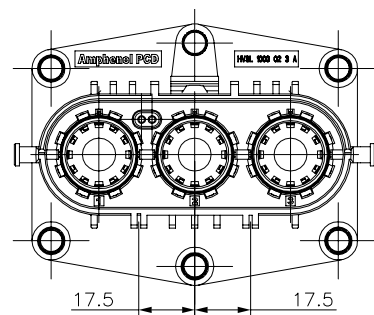
INSERT ORIENTATIONS



3 PIN RECEPTACLE BOX MOUNTED

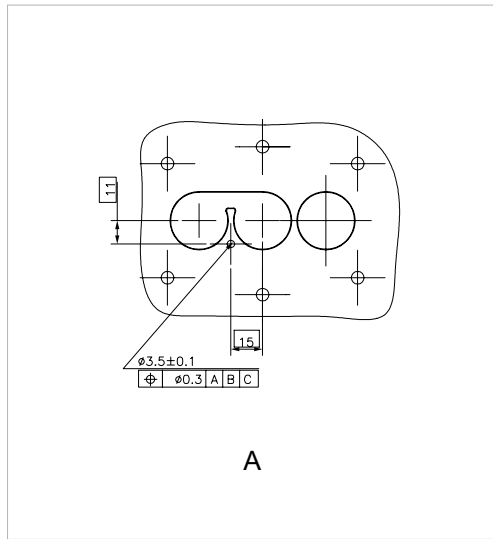
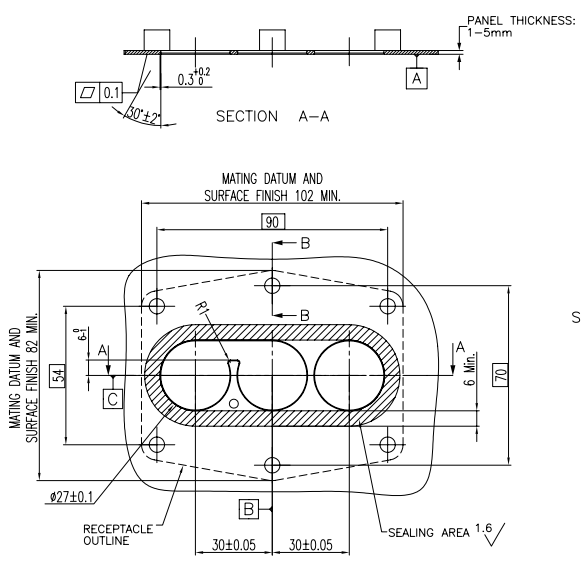


INSERT ORIENTATIONS



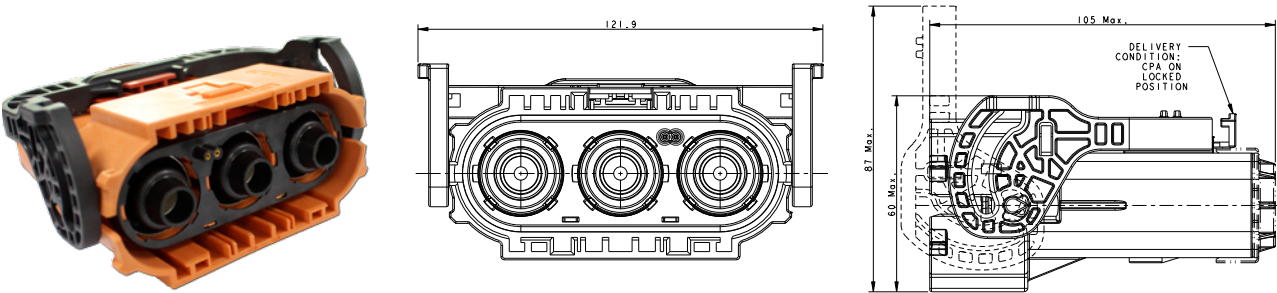
Coding A
P/N HVSL1000 02 3 A

PANEL MOUNTING DIMENSIONS

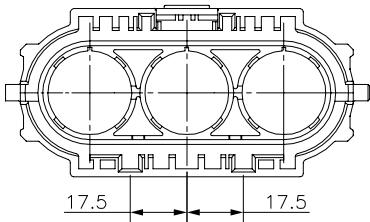


ExcelMate Plus
(HVSL 1000)

3 PIN PLUG

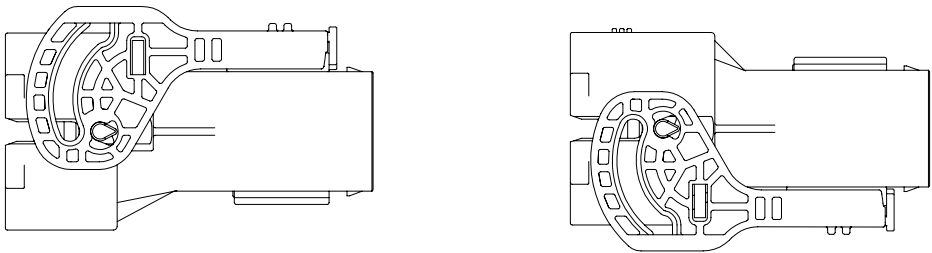


INSERT ORIENTATIONS



	Coding A
P/N	HVSL1000 06 3 A

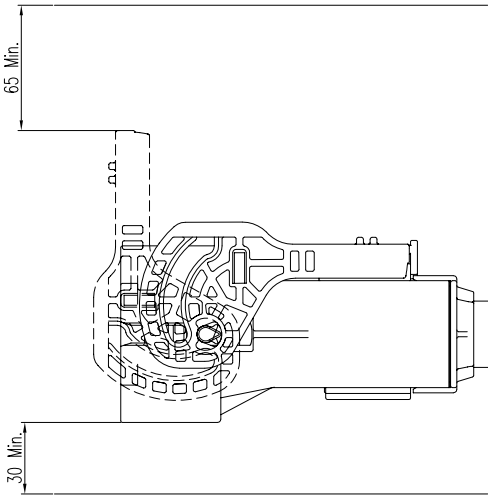
LEVER POSITION



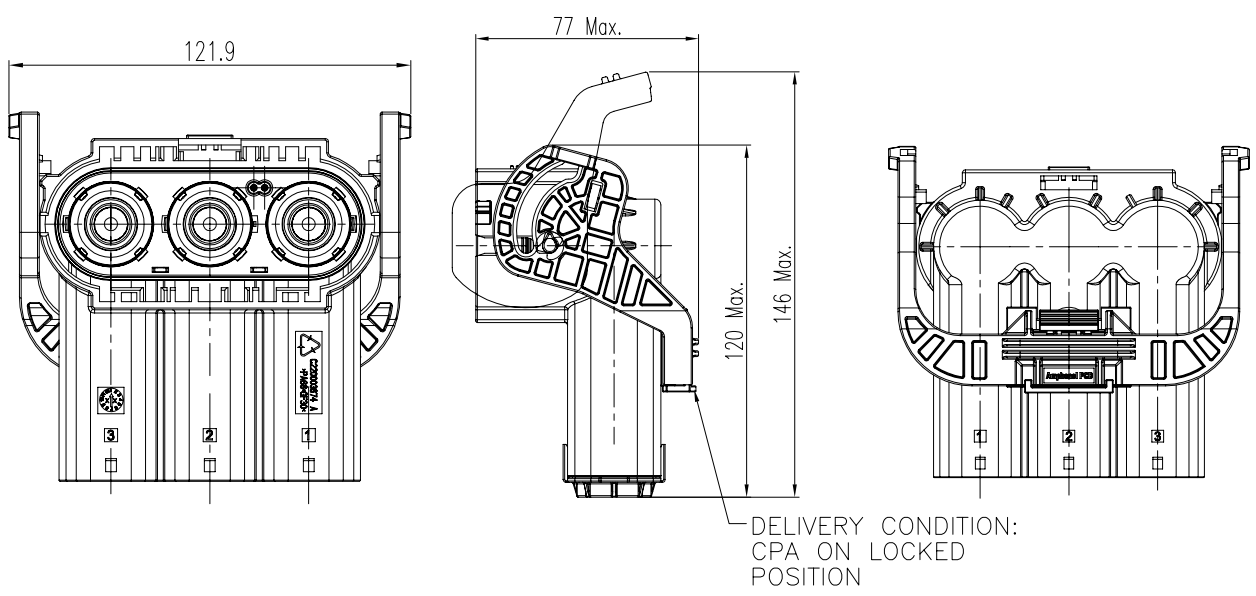
STANDARD LEVER

REVERSE LEVER

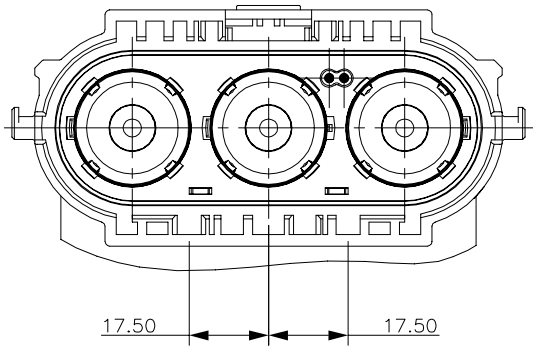
INSTALLATION CLEARANCE



3 PIN PLUG RIGHT ANGLE



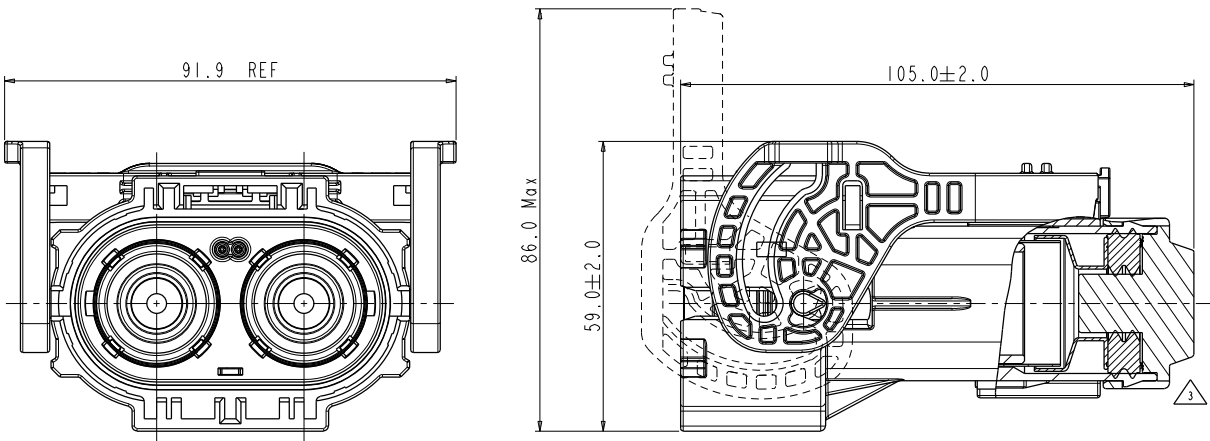
INSERT ORIENTATIONS



P/N

Coding A
HVSL1000 08 3 A

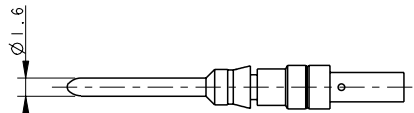
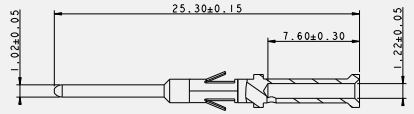
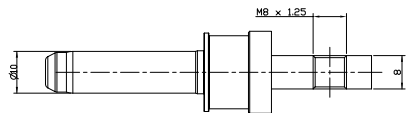
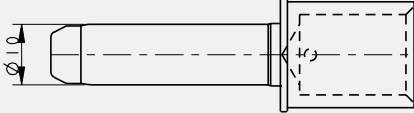
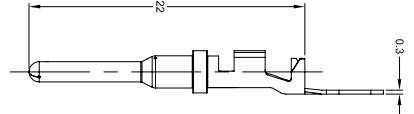
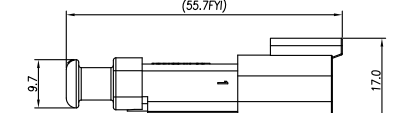
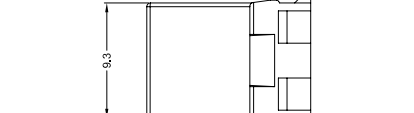
DUMMY PLUG



	HVSL1000	06	2	A	0	S1
Product type:						
06: Straight plug						
Position:						
2: 2 position						
Coding / Alternate position:						
A: Coding A						
B: Coding B						
C: Coding C						
Interlock:						
0: Without interlock 1: With interlock						
Dummy plug:						
S1						

ATTACHMENT: CONTACTS FOR RECEPTACLE

All connectors include contacts. For extra contacts, please order them separately (ref: P/N below)

Name	Contact P/N & Wire Size	Drawing
1 Pin Box mounted receptacle for Interlock	C42000400504G 0.5mm ² max wire	
2 or 3 pin for Interlock	C200003609 0.5mm ² max wire	
Power contact Thread for Bus-bar	C4200036152	
Power contact Crimp for wire	C42000361511 - 70mm ² wire C42000361512 - 50mm ² wire C42000361513 - 35mm ² wire C42000361514 - 25mm ² wire	
1 Pin: In-line receptacle for Interlock	AT60-16-0622 0.5mm ² max wire	
	AT04-2P-SR02BLK 0.5mm ² max wire	
	AW2P	

CONTACTS FOR RECEPTACLE

ATTACHMENT: CONTACTS FOR PLUG

All connectors include contacts. For extra contacts, please order them separately (ref: P/N below)

Name	Contact P/N & Wire Size	Drawing
1 Pin HVIL plug	C210003610	
1 Pin (For In-line plug) Rope for Interlock	C210003608 (Order with HVIL plug)	
1 Pin (For R/A plug) Rope for Interlock	C210003611 (Order with HVIL plug)	
Socket contact	C4200036161 - 70mm ² wire C4200036162 - 50mm ² wire C4200036163 - 35mm ² wire C4200036164 - 25mm ² wire	
Kit of socket insert For plug	C4220036011 - 70mm ² wire C4220036012 - 50mm ² wire C4220036013 - 35mm ² wire C4220036014 - 25mm ² wire	
Kit of socket insert For receptacle in-line	C4220036021 - 70mm ² wire C4220036022 - 50mm ² wire C4220036023 - 35mm ² wire C4220036024 - 25mm ² wire	
Power contact - rear Crimp for wire for right angle plug	C4220036031 - 70mm ² wire C4220036032 - 50mm ² wire C4220036033 - 35mm ² wire C4220036034 - 25mm ² wire	

HVSL 1000 | PRODUCT SERIES OVERVIEW

Single pin
(HVIL External)



In-line receptacle



In-line plug

Single pin
(Without HVIL)



2 pin
(HVIL Integrated)



3 pin
(HVIL Integrated)



EXTRACTION TOOL FOR RECEPTACLE SIGNAL CONTACT

HVIL-contact Extraction tool: HVTOOL11R



HOW TO ORDER (HVSL 1000)

HOW TO ORDER: PLUG

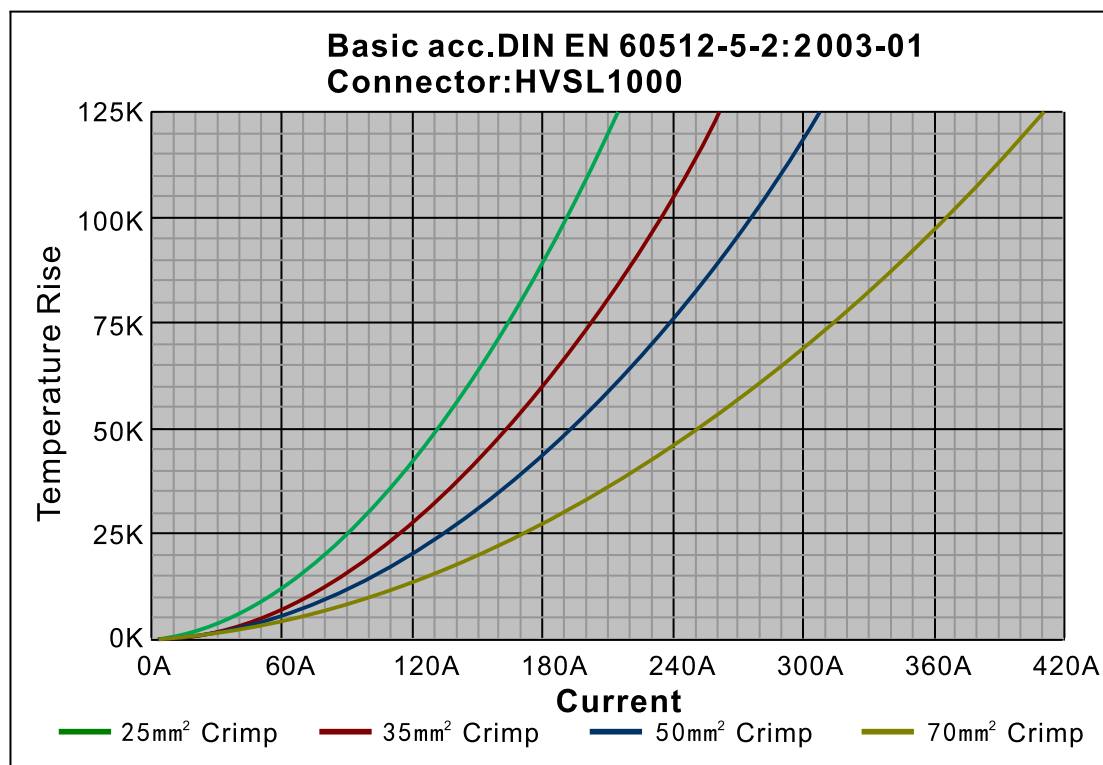
HVSL1000	06	1	A	0	35
Product type:					
06: Straight plug 08: Right angle plug					
Position:					
1: 1 position 2: 2 position 3: 3 position					
Coding / Alternate position:					
A: Coding A (for positions 1, 2 & 3)					
B: Coding B (for positions 1 & 2)					
C: Coding C (for position 1)					
D: Coding D (for position 1)					
Interlock:					
0: Without interlock 1: With interlock					
Cable size:					
25: 25mm ² cable 35: 35mm ² cable 50: 50mm ² cable 70: 70mm ² cable					

HOW TO ORDER: RECEPTACLE

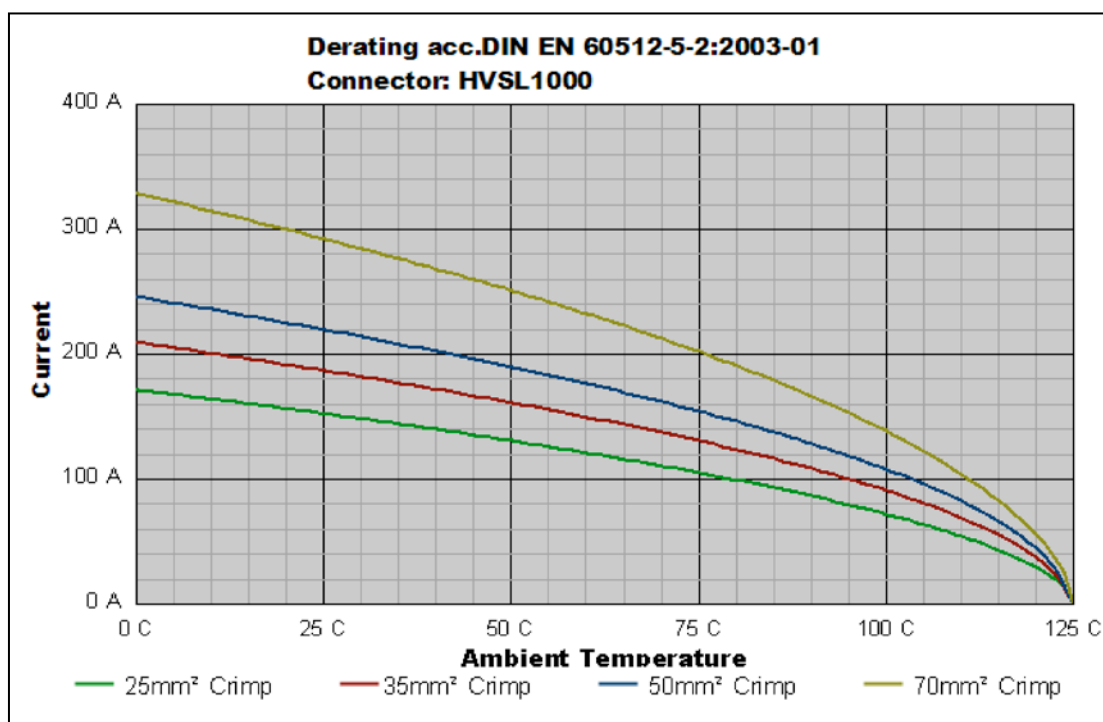
HVSL1000	01	1	A	0	H8
Product type:					
01: In-line receptacle					
Position:					
1: 1 position 2: 2 position 3: 3 position					
Coding / Alternate position:					
A: Coding A (for position 1)					
B: Coding B (for position 1)					
C: Coding C (for position 1)					
D: Coding D (for position 1)					
Interlock:					
0: Without interlock 1: With interlock					
Cable size:					
25: 25mm ² cable 35: 35mm ² cable 50: 50mm ² cable 70: 70mm ² cable					

HVSL1000	02	1	A	0	H8
Product type:					
02: Box mounted receptacle					
04: Box mounted receptacle without Interlock					
Position:					
1: 1 position 2: 2 position 3: 3 position					
Coding / Alternate position:					
A: Coding A (for positions 1, 2 & 3)					
B: Coding B (for positions 1 & 2)					
C: Coding C (for position 1)					
D: Coding D (for position 1)					
Interlock:					
0: Without interlock 1: With interlock					
Cable size:					
H8: M8 OT terminal					

HVSL 1000 | Temperature Rise



HVSL 1000 | Derating Curve



Remark: tests carried out on the complete connector.

Excel|Mate Plus (HVSL P 1000)

EXCEL | MATE Plus (P 1000)



High Voltage Safety Lock

EXCEL | MATE Plus (P 1000) offers a max rated voltage up to 1000V and a max rated current of 250A. It can be used for power solutions in various HEV applications.

External HVIL.

KEY FEATURES

With interlock solution

Sealing, IP67 (mated), IP6K9K

2-position available

Touch-proof, IP2XB

Multiple coding positions

APPLICATIONS

HEV Battery

Inverters

Junction boxes

Power distribution boxes

MECHANICAL

Durability ≥ 50 mating cycles

Wire range 50 to 70 mm²

ELECTRICAL

Rated voltage 1000V DC

Rated current

70mm² shield cable:
250A Max @ ambient
temperature 70°C

50mm² shield cable:
200A Max @ ambient
temperature 70°C

Insulator resistance $> 200\text{M}\Omega$

Dielectric withstand
voltage 3000V AC

ENVIRONMENTAL

Sealing IP67, IP6K9K (mated)

Touch-proof IP2XB

Temperature range -40°C to 125°C

STANDARDS

USCAR-2

USCAR-37

LV-215

RoHS

MATERIAL

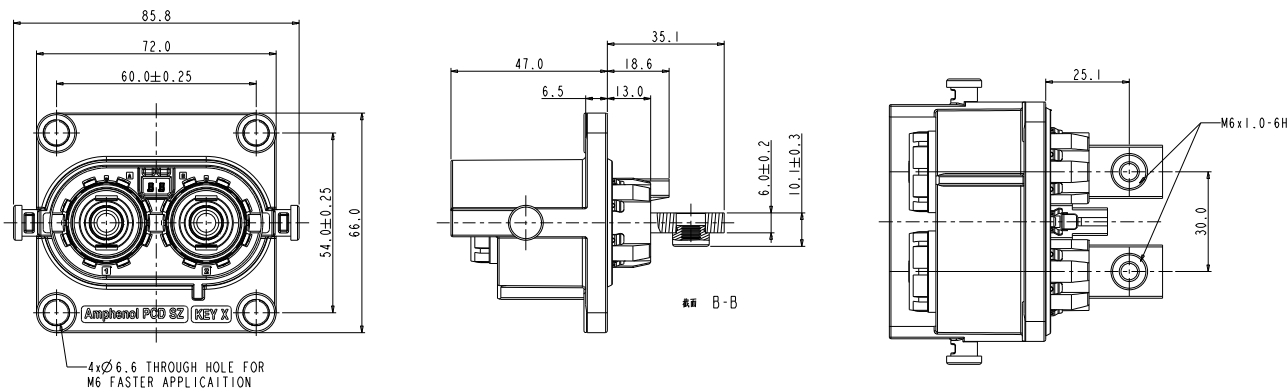
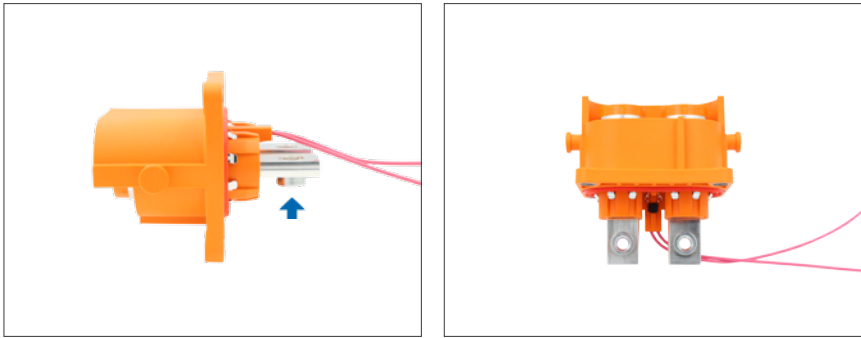
Contacts Copper alloy with silver
plating

Housing PA66 + GF

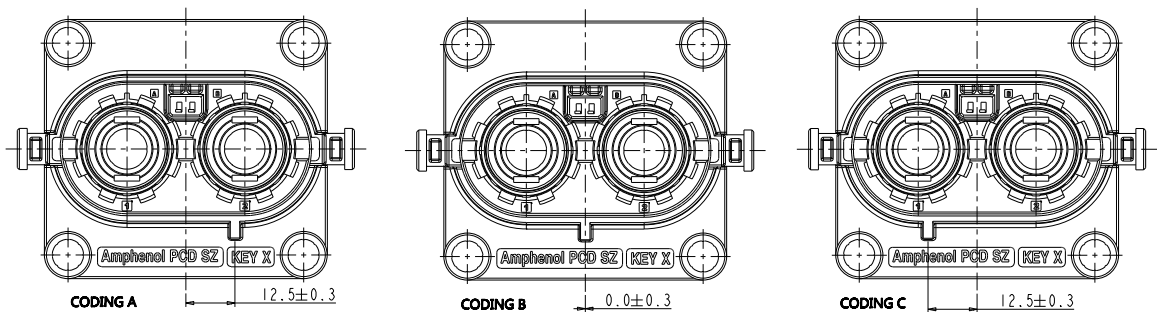
Seal SR

2 PIN RECEPTACLE

Signal PIN and TPA need to be purchased separately.

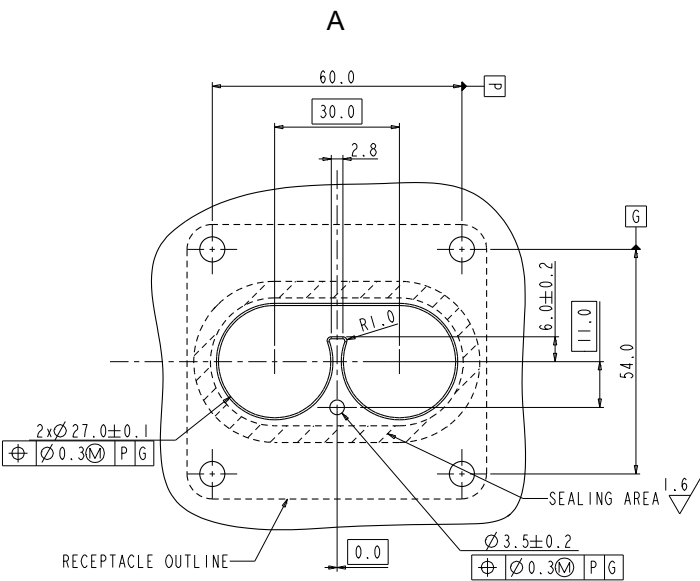


INSERT ORIENTATIONS

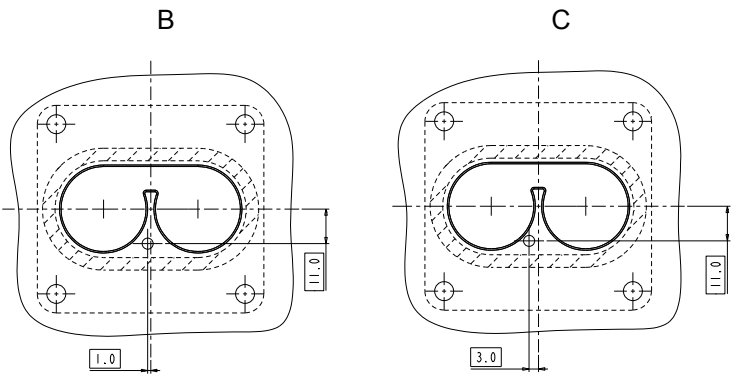
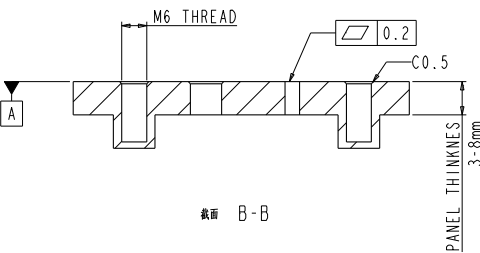


	Coding A	Coding B	Coding C
P/N	HVSL P 1000 02 2 A	HVSL P 1000 02 2 B	HVSL P 1000 02 2 C

PANEL MOUNTING DIMENSIONS



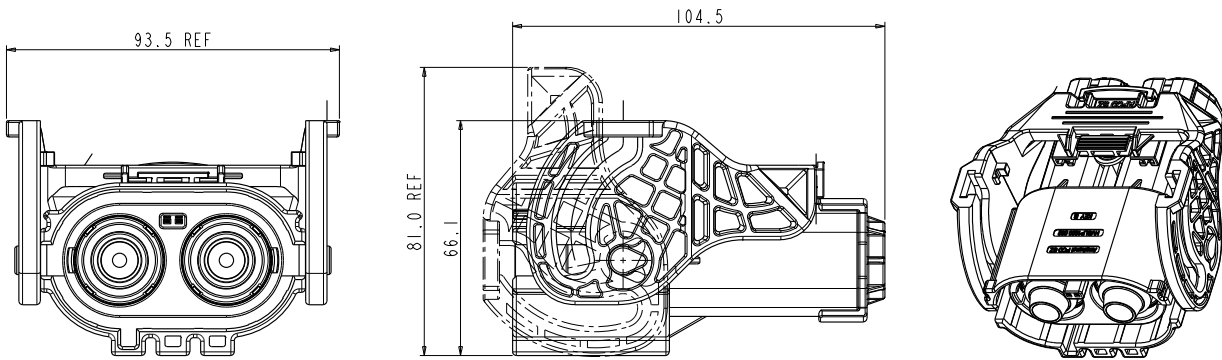
ALL OTHER DIMENSIONS SAME AS CODING A



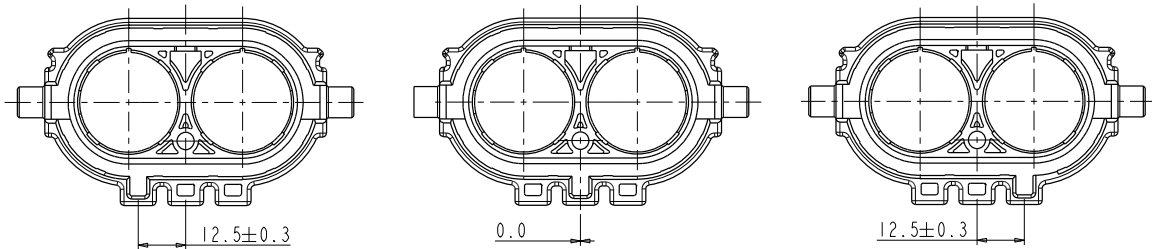
CODING B INTERFACE VIEW
ALL OTHER DIMENSIONS SAME AS CODING B

CODING C INTERFACE VIEW
ALL OTHER DIMENSIONS SAME AS CODING C

2 PIN STRAIGHT PLUG

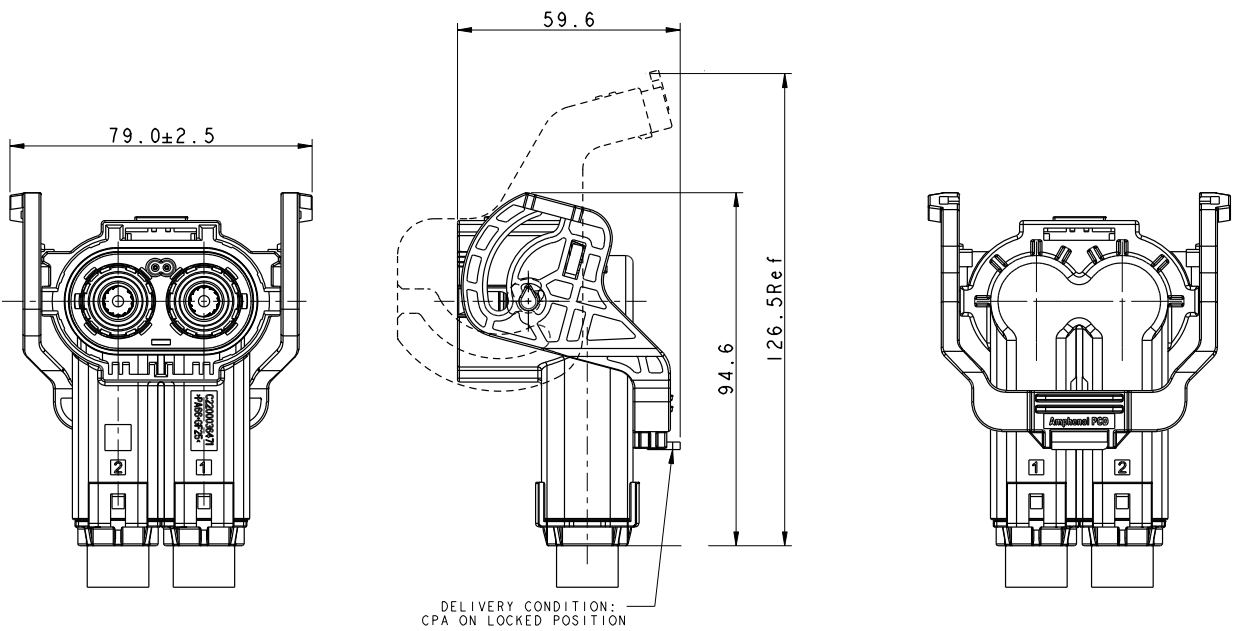
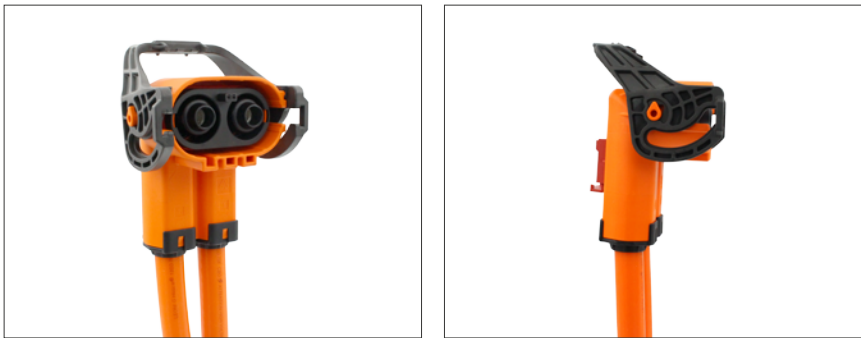


INSERT ORIENTATIONS

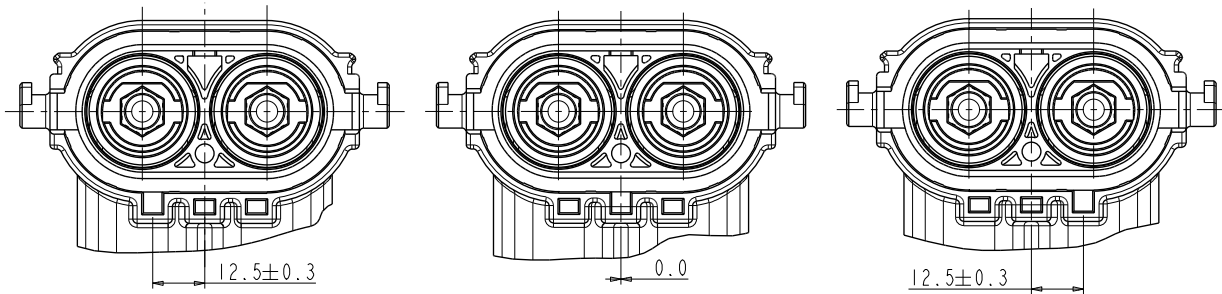


	Coding A	Coding B	Coding C
P/N	HVSL P 1000 06 2 A	HVSL P 1000 06 2 B	HVSL P 1000 06 2 C

2 PIN RIGHT ANGLE PLUG



INSERT ORIENTATIONS



	Coding A	Coding B	Coding C
P/N	HVSL P 1000 08 2 A	HVSL P 1000 08 2 B	HVSL P 1000 08 2 C

HOW TO ORDER: PLUG

	HVSL P 1000	06	2	A	0	01
Product type:						
06: Straight plug 08: Right angle plug						
Position:						
2: 2-position						
Coding / Alternate position:						
A: Coding A						
B: Coding B						
C: Coding C						
Interlock:						
0: Without interlock 1: With interlock						
Cable OD:						
01: 17.9 ± 0.3mm 02: 15.5 ± 0.3mm						

HOW TO ORDER: RECEPTACLE

	HVSL P 1000	02	2	A	D	H6
Product type:						
02: Box mounted receptacle						
Position:						
2: 2 position						
Coding / Alternate position:						
A: Coding A						
B: Coding B						
C: Coding C						
Standard part:						
D: The nut is at the bottom of the terminal						
Cable size:						
H6: M6 OT terminal						

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