

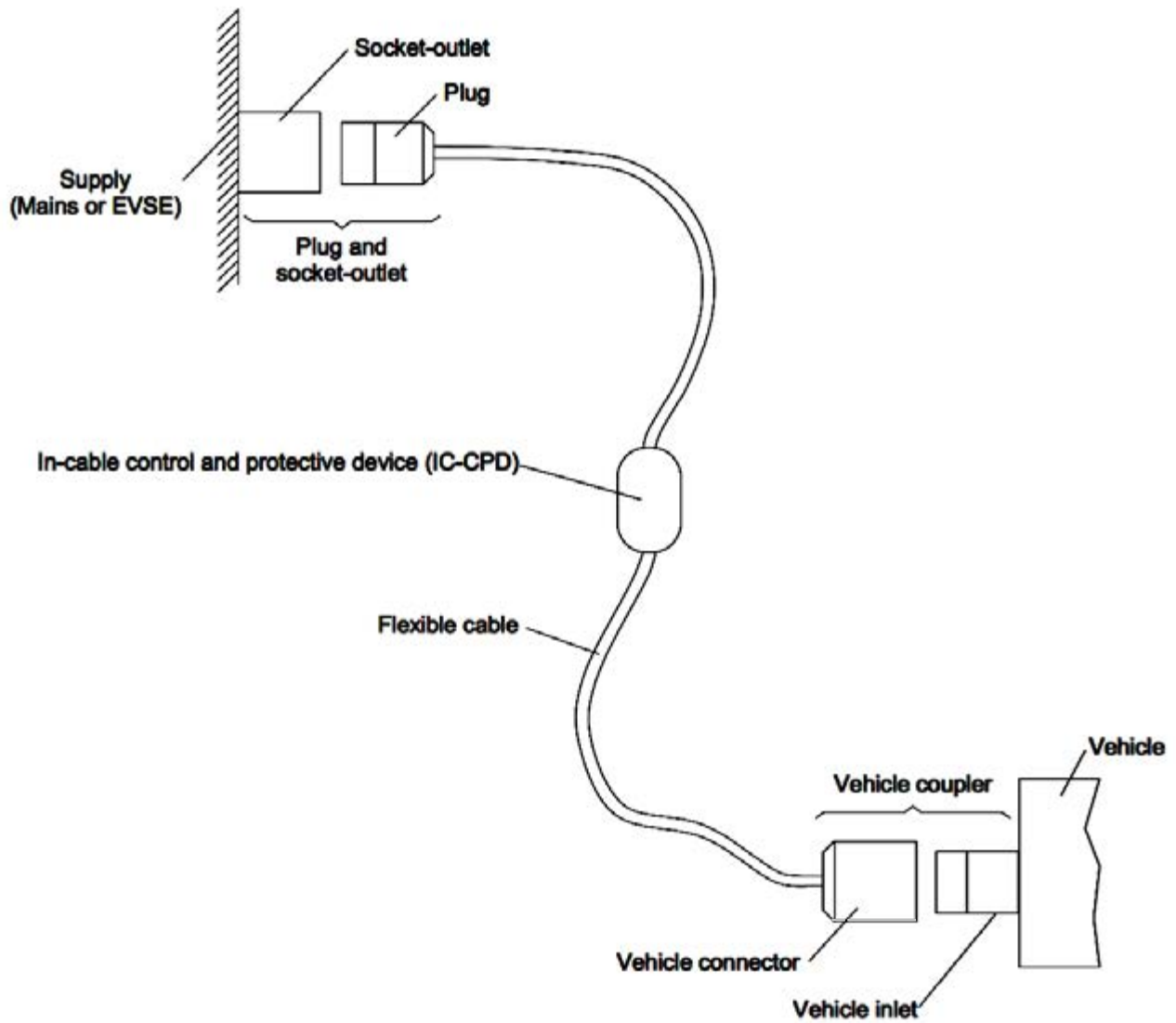


EXCEL | MATE CC

(Charging Coupler)

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IEC STANDARD 62196-2



STANDARD SHEET	
Socket-outlet	Standard sheet 2-IIa
Plug	Standard sheet 2-IIb
Vehicle connector	Standard sheet 2-IIe
Vehicle inlet	Standard sheet 2-IIf

IEC STANDARD 62196-2



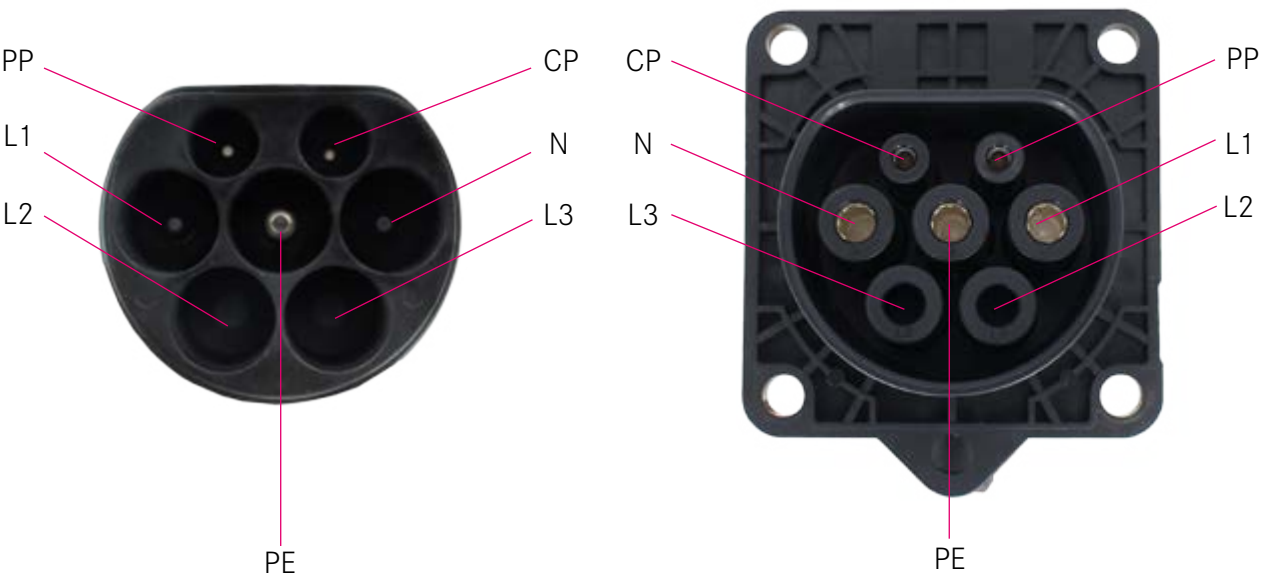
KEY FEATURES:

Compliant with:
IEC 62196-2
IEC 61851-1

High current contacts with
Amphenol Radsok technology

MECHANICAL		
Mating cycles	> 10,000 cycles (unloaded)	
Connector (in mated condition) retention force:		
AC coupler	Unmating	100N Max
	Mating	100N Min
ELECTRICAL		
Rated current	See page 7	
Rated voltage	See page 7	
Contact resistance	0.5mΩ Max	
Insulation resistance	>100MΩ (DC500V)	
ENVIRONMENTAL		
Protection degree	IP55 (mated)	
Ambient temperature	-30°C to 50°C	
MATERIAL		
Shell	Thermoplastic	
Contact	Copper alloy, silver or nickel plating	
Inserts	Thermoplastic	
Sealing gasket	Rubber or silicon rubber	
Insulator inflammability	UL94V0	

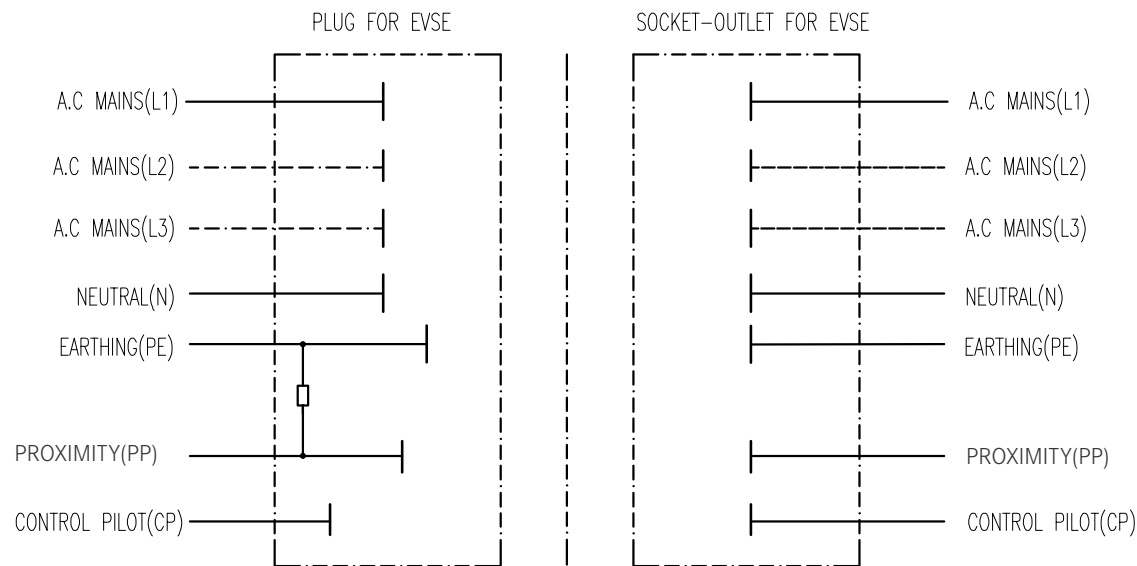
INSERT ARRANGEMENTS



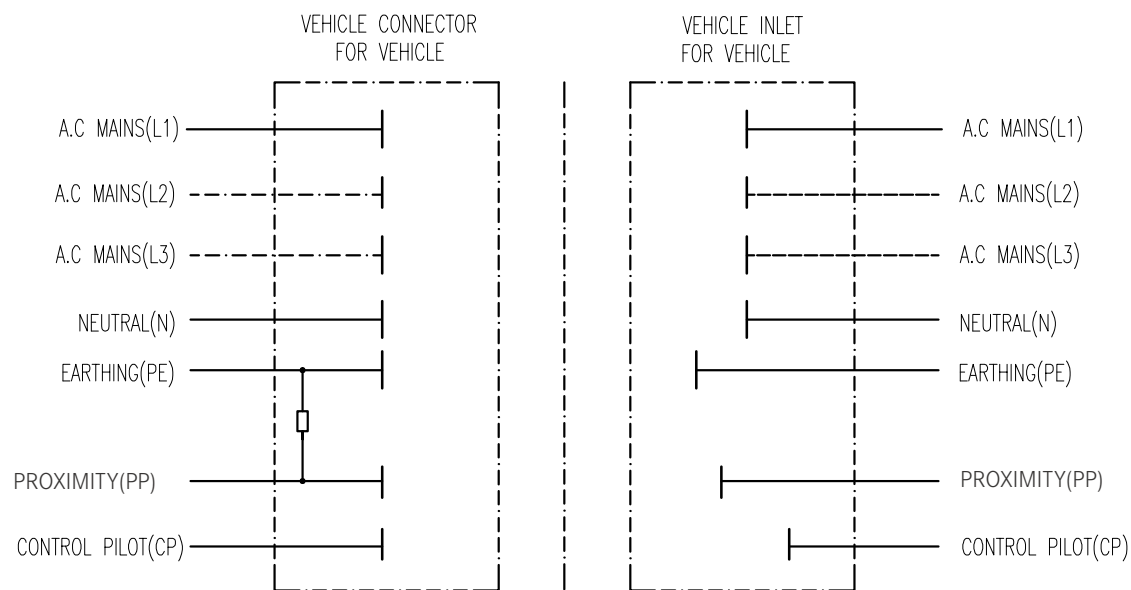
CONFIGURATION

A.C. Type 2		Functions
1-Phase	3-Phase	
250V (16A), 20A, 32A	480V 16A, 20A, 32A	L1 (Mains 1)
-	480V 16A, 20A, 32A	L2 (Mains 2)
-	480V 16A, 20A, 32A	L3 (Mains 3)
250V (16A), 20A, 32A	480V 16A, 20A, 32A	N (Neutral)
Rated for fault		PE (Protective Ground/Earth)
30V 2A		CP (Control pilot)
30V 2A		PP (Proximity)

Circuit diagram for EVSE charging coupler



Circuit diagram for vehicle coupler



AC TYPE 2 COUPLER FOR EVSE SIDE

Socket-outlet



Type 2 / Mode 3	Part Number (without cable)	
	16/20A	1-Phase
	16/20A	3-Phase
	32A	1-Phase
	32A	3-Phase
	63A	1-Phase
	63A	3-Phase

Compliant with IEC 62196-2 standard 2-II a.

Configuration:

250V | (16A), 20A, 32A or 63A | 1-phase

480V | (16A), 20A, 32A or 63A | 3-phase

Electronic lock and Solenoid lock both available

3 positions (120° rotatable):

4 o'clock, 8 o'clock, 12 o'clock

More features: Protection cap, water drainage design, rear mount

Plug



Type 2 / Mode 3	Part Number (without cable)	
	16/20A	1-Phase
	16/20A	3-Phase
	32A	1-Phase
	32A	3-Phase

Compliant with IEC 62196-2 standard sheet 2-II b.

Configuration:

250V | 16A/20A or 32A | 1-phase

480V | 16A/20A or 32A | 3-phase

AC TYPE 2 COUPLER FOR EV SIDE

Socket-inlet



Type 2 / Mode 3	Part Number (without cable)	
	32A	3-Phase
	32A	1-Phase
	32A	3-Phase
	32A	1-Phase

Compliant with IEC 62196-2 standard sheet 2-II b.

Configuration:

250V | 32A | 1-phase

480V | 32A | 3-phase

Vehicle connector



Type 2 / Mode 3	Part Number (without cable)	
	16/20A	1-Phase
	16/20A	3-Phase
	32A	1-Phase
	32A	3-Phase

Compliant with IEC 62196-2 standard sheet 2-II e.

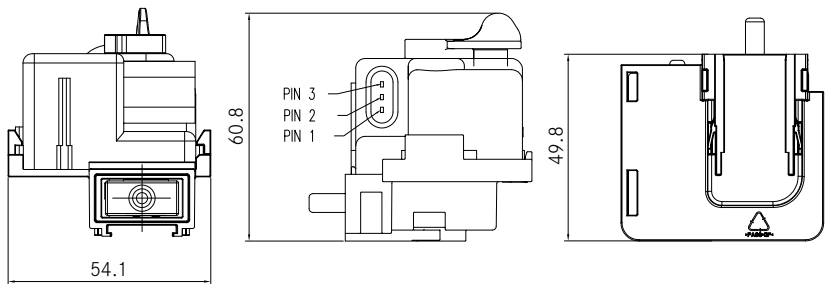
Configuration:

250V | 16A/20A or 32A | 1-phase

480V | 16A/20A or 32A | 3-phase

LOCKING ACTUATOR

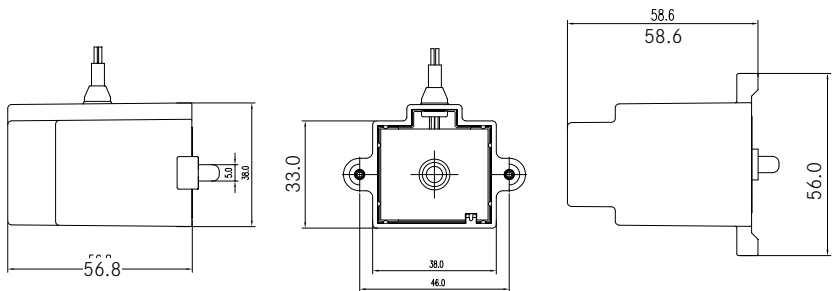
Electronic lock



P/N: HVCOACSELOCKH

E-LOCK	PIN 3	PIN 1	PIN 2 SIGNAL
UNLOCKING	+12V DC	-	
LOCKING	-	+12V DC	SIGNAL

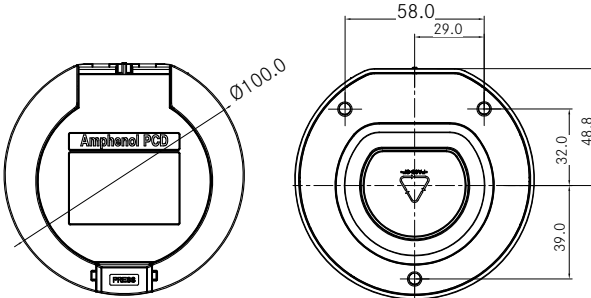
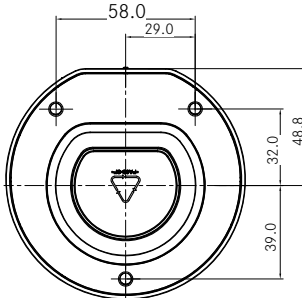
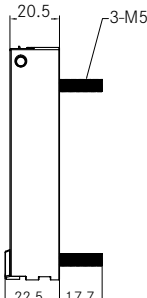
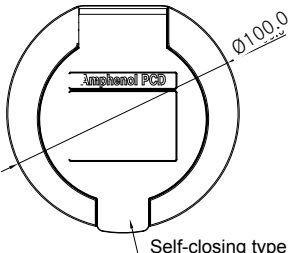
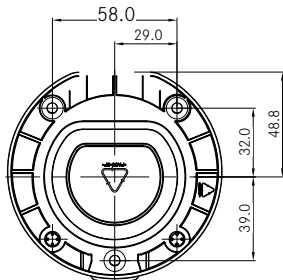
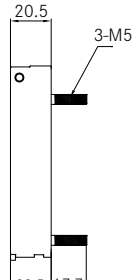
Solenoid lock



P/N: HVCOACSELOCKS

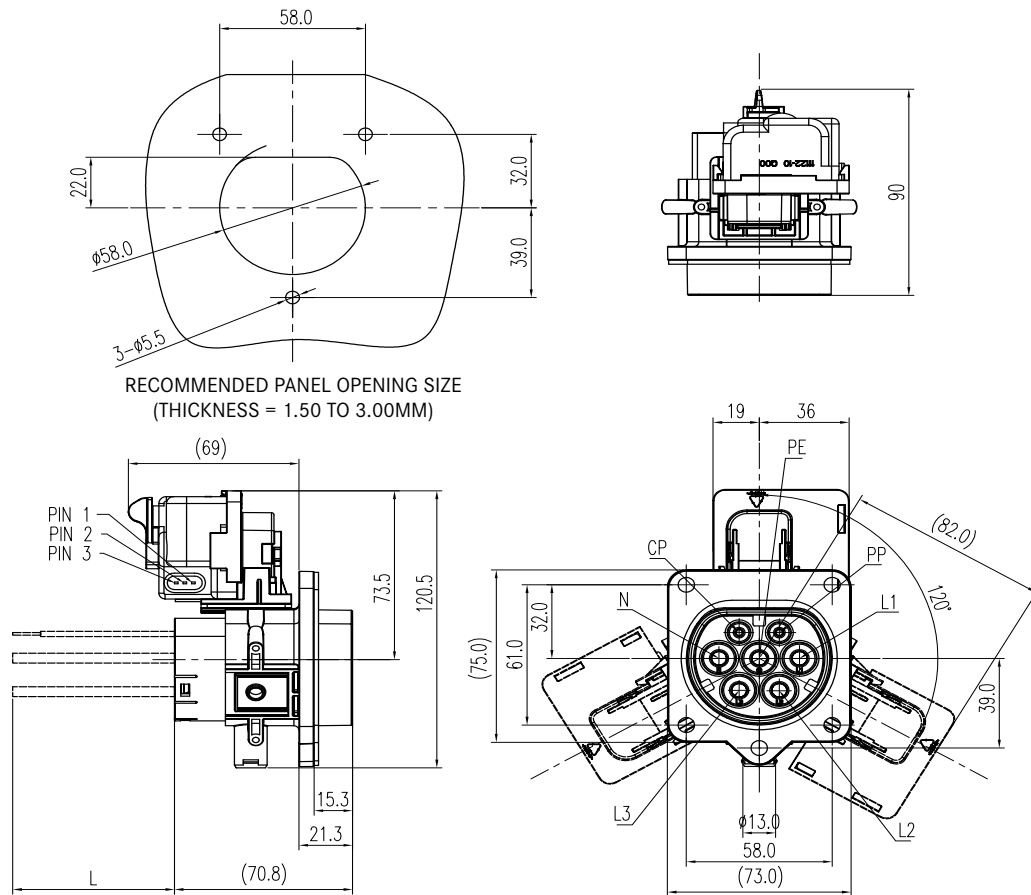
	LOCKING ACTUATOR		SIGNAL (Switch circuit)	
Wire color	Black	Yellow	Red	White
Lock	+12V	0V	Up to 250V AC	
Unlock	0V		0V	
Current	Initial current: 0.5A		0.1A	

PROTECTION CAP WITH HINGED LID

P/N		DRAWING		
HVCOILIDA	 Push			
HVCOILIDC	 Pull			

SOCKET OUTLET DIMENSIONS

Socket-outlet with electronic lock



12 o'clock



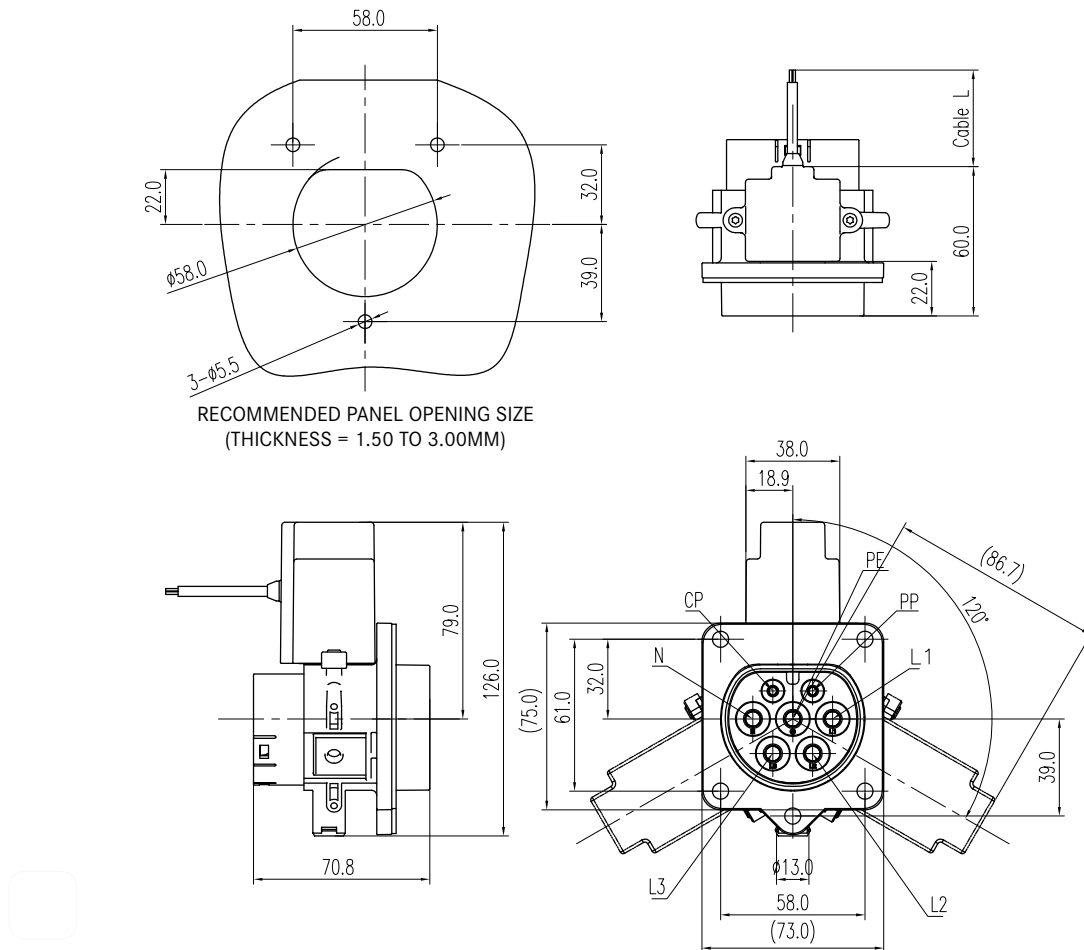
8 o'clock



4 o'clock

SOCKET OUTLET DIMENSIONS

Socket-outlet with solenoid lock



12 o'clock

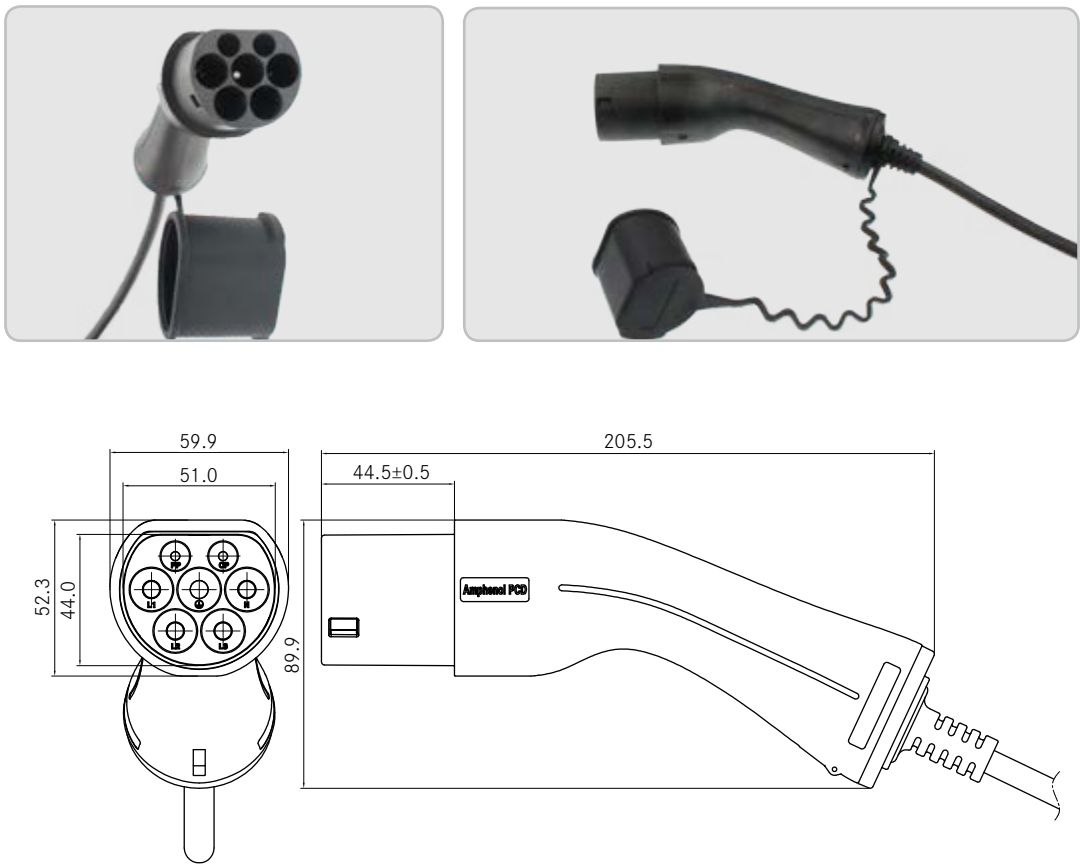


8 o'clock

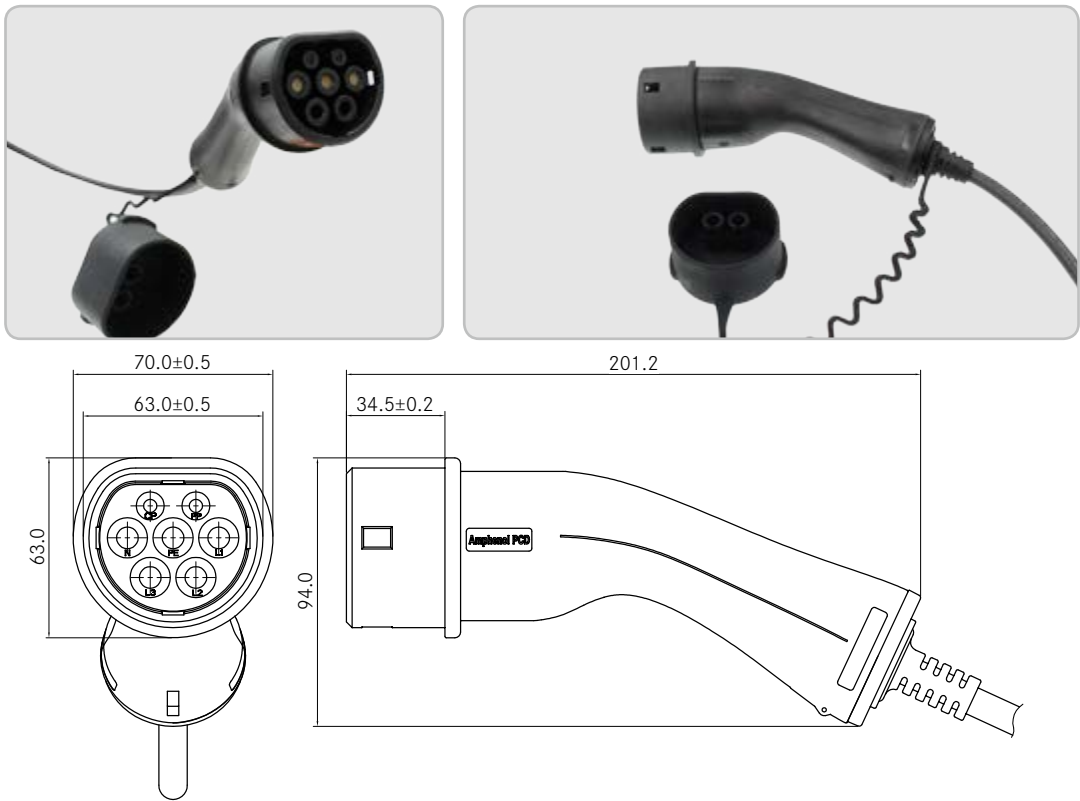


4 o'clock

PLUG DIMENSIONS (EVSE)



VEHICLE CONNECTOR DIMENSIONS

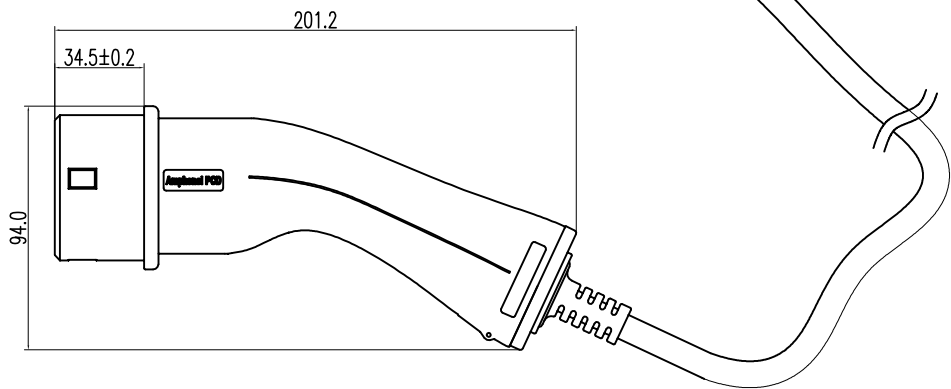
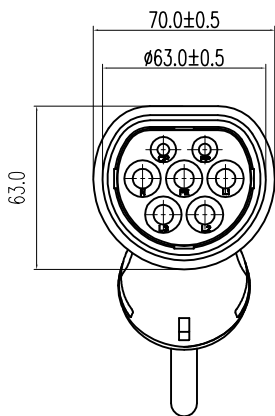
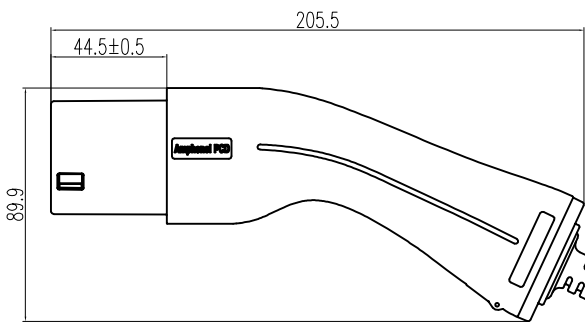
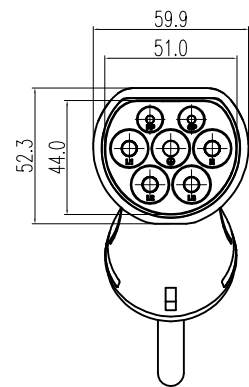


PLUG (EVSE) + VEHICLE CONNECTOR (EV) DIMENSIONS



Part Number (without cable)		
16/20A	1-Phase	HVCOIMASCR6PS502LXXXX
16/20A	3-Phase	HVCOIMASCR6PS702LXXXX
32A	1-Phase	HVCOIMASCR6PF506LXXXX
32A	3-Phase	HVCOIMASCR6PF706LXXXX

LXXXX: Cable lenght (unit in mm)



HOW TO ORDER

	HVCO	I	M	A	SC	R6	PSXXX	T	R	W	LXXXX	XXXX
I: IEC Type 2 Charge outlet												
Connector type: M: Plug / Plug + Vehicle connector (see p.12) / Vehicle connector F: Socket-outlet / Vehicle inlet												
Plug version: A: Version A (Plug only)												
S: EVSE coupler (Plug or socket-outlet) SC: Plug + Vehicle connector (see p.12) Omit SC: Vehicle coupler (Vehicle connector or vehicle inlet)												
Contact size: R6: 6mm Radsok, pin contact												
Type of connector and insert arrangements: PSXXX: 20A cable side (Plug Slow / Vehicle connector Slow) PFXXX: 32A cable side (Plug Fast / Vehicle connector Fast) SSXXX: 20A panel side (Socket-outlet Slow / Vehicle inlet Slow) SFXXX: 32A panel side (Socket-outlet Fast / Vehicle inlet Fast)												
Temperature sensor: T: Temperature sensor Omit: No temperature sensor needed												
R: Resistor inside the plug / vehicle connector Omit: No resistor needed												
W: Protection tube Omit: No protection tube needed												
Cable length: LXXXX: Cable lenght (Unit in mm) Omit: No cable needed												
Cable accessories: XXXX: Cable accessories or customer code												



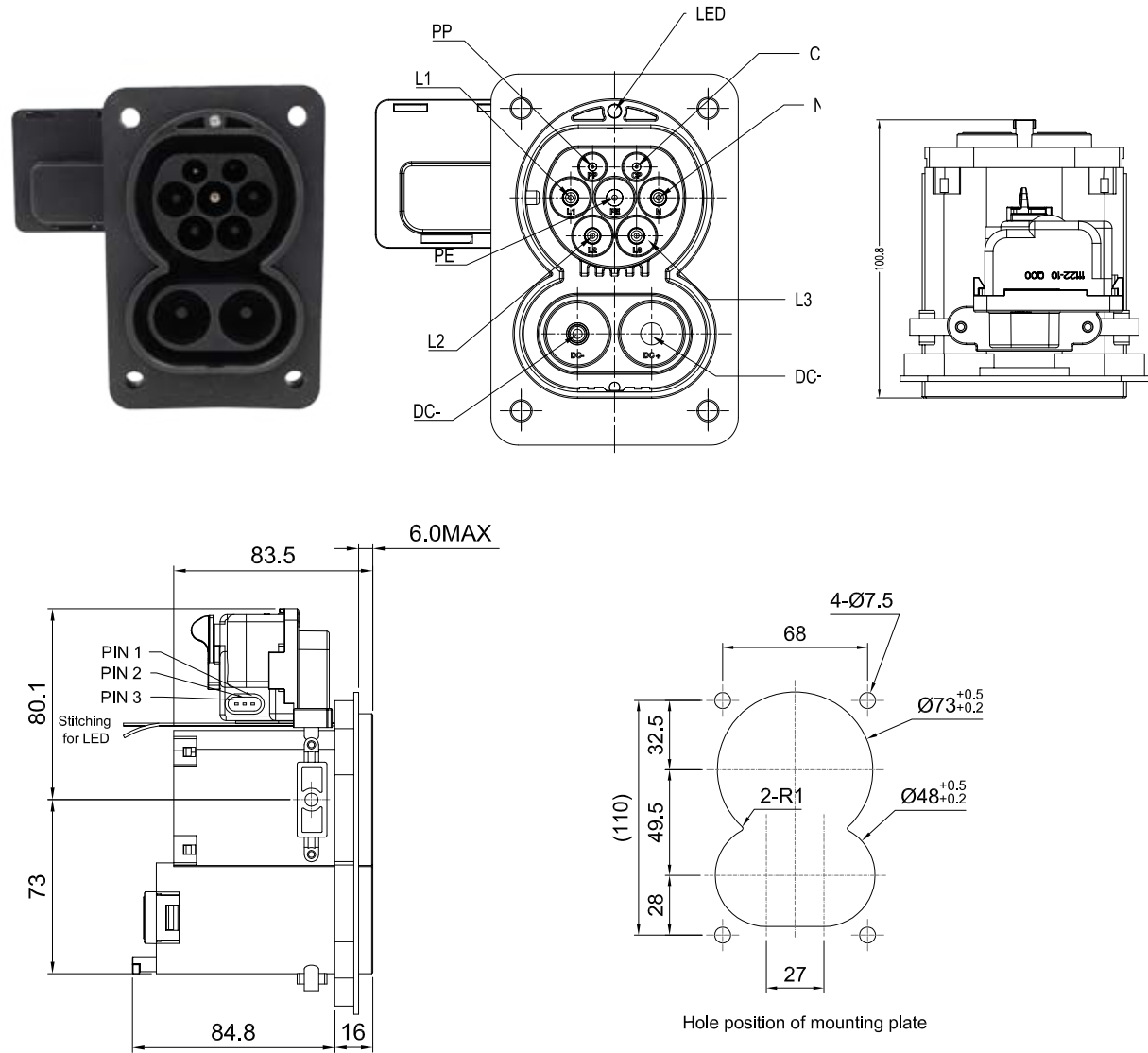
KEY FEATURES:

Compliant with:
IEC 62196-2
IEC 62196-3

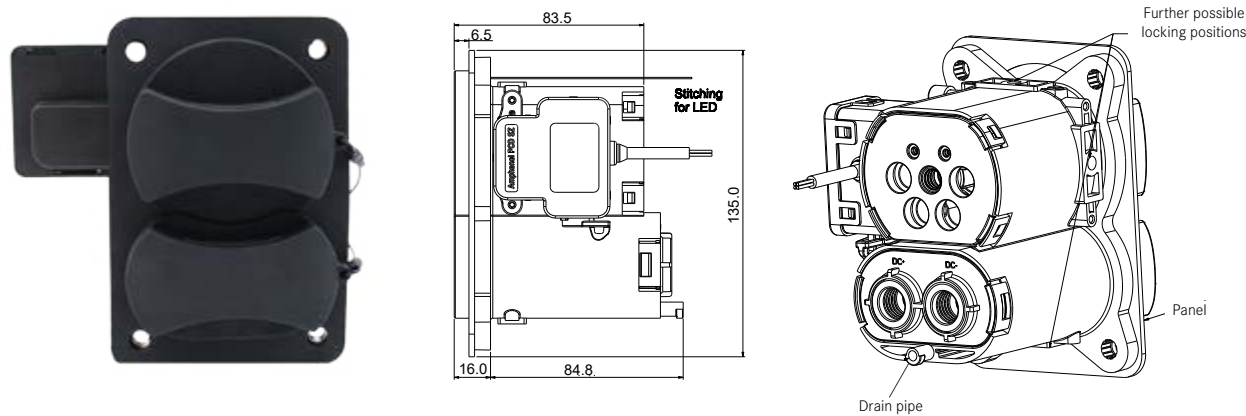
MECHANICAL	
Mating cycles	> 10,000 cycles (unloaded)
Insertion / withdrawal force	< 100N
ELECTRICAL	
Rated current	See page 18 and 20
Rated voltage	See page 18 and 20
Contact resistance	0.5mΩ Max (AC) 0.35mΩ Max (DC)
Insulation resistance	> 100MΩ
Temperature sensor (Optional)	The two power contacts DC+ and DC- are monitored by temperature-dependent resistor sensors
ENVIRONMENTAL	
Protection degree	IP44 (mated)
Ambient temperature	-30°C to 50°C
MATERIAL	
Shell	Nylon
Contact	Copper alloy, silver or nickel plating
Inserts	Thermoplastic
Sealing gasket	Rubber or silicon rubber
Insulator inflammability	UL94V0

IEC COMBO VEHICLE INLET DIMENSIONS

Rear mount without protection cap



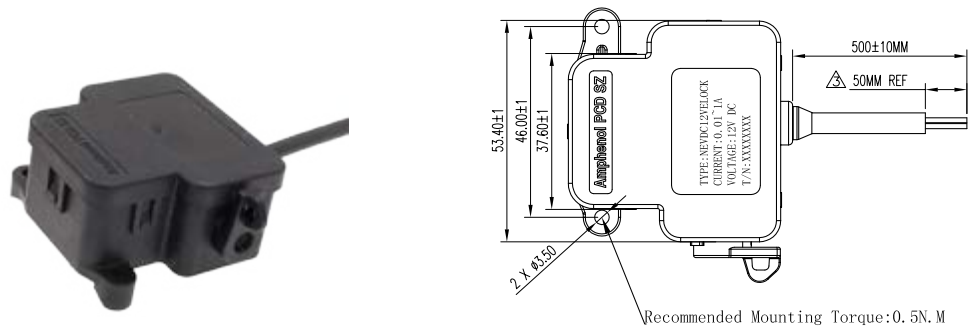
Rear mount with protection cap



LOCKING ACTUATOR

Electronic lock | AMPHENOL PCD SHENZHEN (12V, 24V)

4 wire solution is available for both 12V and 24V.

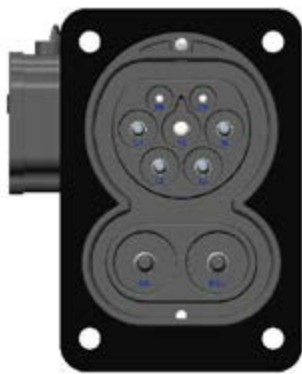


P/N (12V): NEVDC12VELOCK

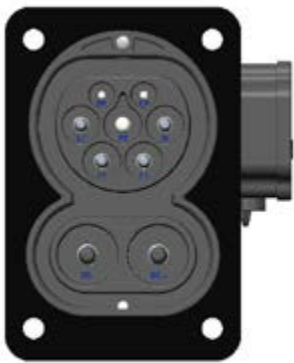
TYPE	RED	BLACK	WHITE	BLUE
UNLOCKING	+	-	SIGNAL($R_U=1k\Omega$)	
LOCKING	-	+	SIGNAL($R_L=11k\Omega$)	

P/N (24V): NEVDC24VELOCK

TYPE	RED	BLACK	WHITE	BLUE
UNLOCKING	+	-	SIGNAL($R_U=+\infty\Omega$)	
LOCKING	-	+	SIGNAL($R_L=0\Omega$)	

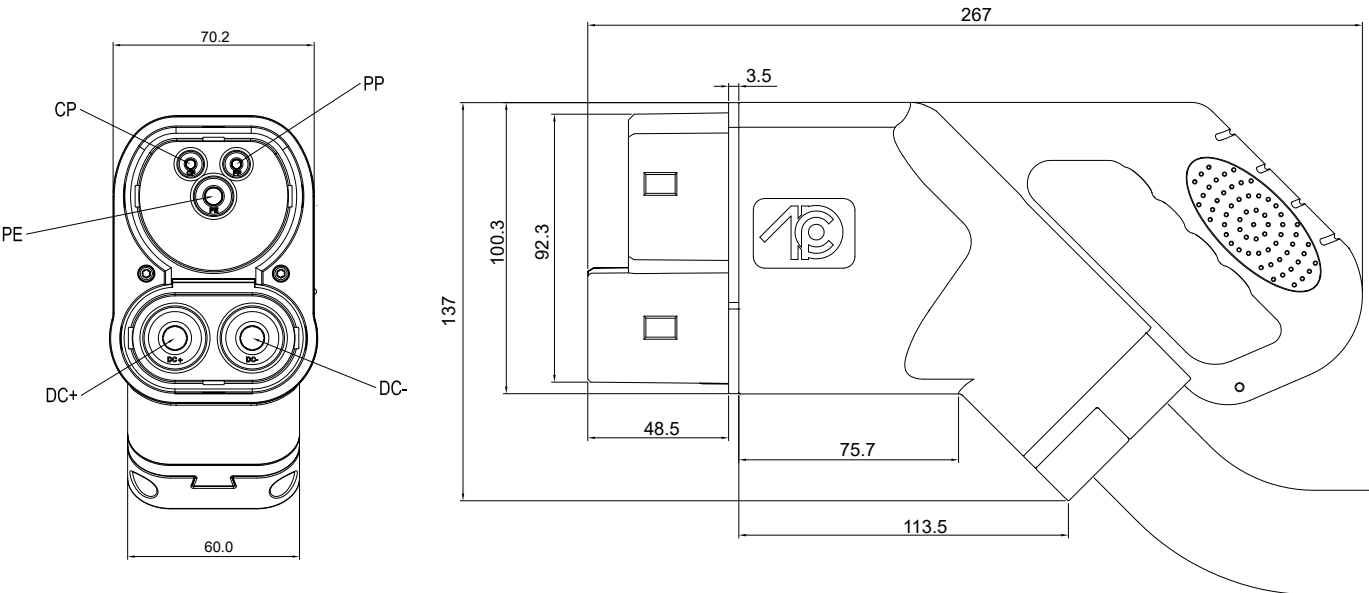


9 o'clock

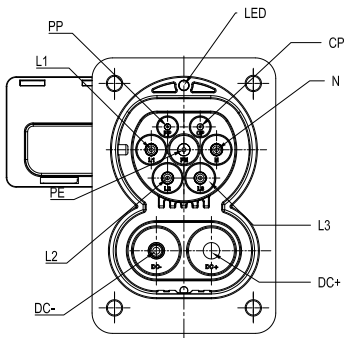


3 o'clock

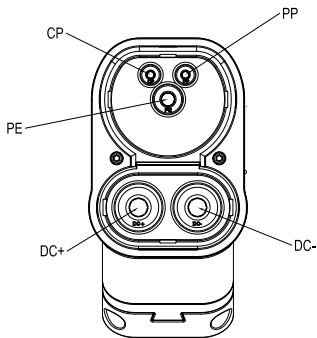
IEC COMBO VEHICLE CONNECTOR DIMENSIONS



IEC COMBO ELECTRICAL SPECIFICATIONS

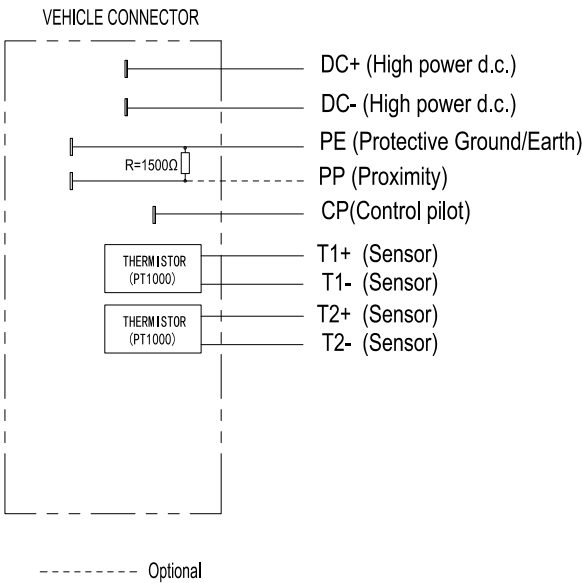
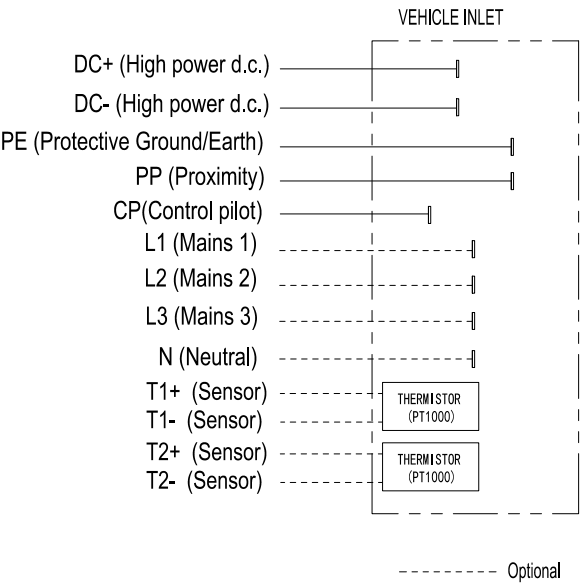


Combined interface		Functions
1-phase	3-phase	
250V 32A	480V 32A	L1 (Mains 1) - Optional
-	480V 32A	L2 (Mains 2) - Optional
-	480V 32A	L3 (Mains 3) - Optional
250V 32A	480V 32A	N (Neutral) - Optional
Rated for fault		PE (Protective Ground/Earth)
30V 2A		CP (Control pilot)
30V 2A		PP (Proximity)
1000V 65A, 125A, 200A		DC+ (High power d.c.)
1000V 65A, 125A, 200A		DC- (High power d.c.)



Combined interface	Functions
Rated for fault	PE (Protective Ground/Earth)
30V 2A	CP (Control pilot)
30V 2A	PP (Proximity)
1000V 65A, 125A, 200A	DC+ (High power d.c.)
1000V 65A, 125A, 200A	DC- (High power d.c.)

CIRCUIT DIAGRAMS



HOW TO ORDER | IEC COMBO

IEC Combo [Vehicle inlet](#)

	HVCO	C	F	6	A	T	R8	SFXXX	LXXXX	XXXX
C: IEC Combo										
Connector type: F: Vehicle inlet										
AC cable size: 6: 6mm ² , 32A Omit: Without AC cable (DC cable only)										
Protection cap: A: Protection cap										
Temperature sensor (For DC): T: NTC temperature sensor (For 65A, 125A) PT: PT1000 temperature sensor (For 65A, 125A, 200A)										
Contact size: R8: 8mm pin contact										
Type of connector and insert arrangements: SFXXX: 32A panel side (Vehicle inlet Fast)										
Cable length: LXXXX: Cable length (Unit in mm) L0000: No cable needed										
Cable accessories: XXXX: Cable accessories or customer code										

IEC Combo [Vehicle connector](#)

	HVCO	C	M	T	R8	PF	5XX	LXXXX	XXXX
C: IEC Combo									
Connector type: M: Vehicle connector									
Temperature sensor: T: PT1000 temperature sensor									
Contact size: R8: 8mm Radsok									
Type of connector and insert arrangements: PFXXX: 32A cable side (Vehicle connector Fast)									
Cable size for DC: 5XX: Cable size for DC									
Cable length: LXXXX: Cable length (Unit in mm) L0000: No cable needed									
Cable accessories: XXXX: Cable accessories or customer code									

PART NUMBER | IEC COMBO

Vehicle inlet

P/N	Rated current (AC)	Rated current (DC)	Phase	AC cable size	DC cable size	Temperature sensor (DC) Recommended
HVCOCF6ATR8SF916	32A	65A	3	6mm ²	16mm ²	NTC
HVCOCF6ATR8SF950	32A	125A	3	6mm ²	50mm ²	NTC
HVCOCF6ATR8SF970	32A	200A	3	6mm ²	70mm ²	PT1000
HVCOCF6ATR8SF716	32A	65A	1	6mm ²	16mm ²	NTC
HVCOCF6ATR8SF750	32A	125A	1	6mm ²	50mm ²	NTC
HVCOCF6ATR8SF770	32A	200A	1	6mm ²	70mm ²	PT1000
HVCOCFR8ATSF516	-	65A	-	-	16mm ²	NTC
HVCOCFR8ATSF550	-	125A	-	-	50mm ²	NTC
HVCOCFR8ATSF570	-	200A	-	-	70mm ²	PT1000

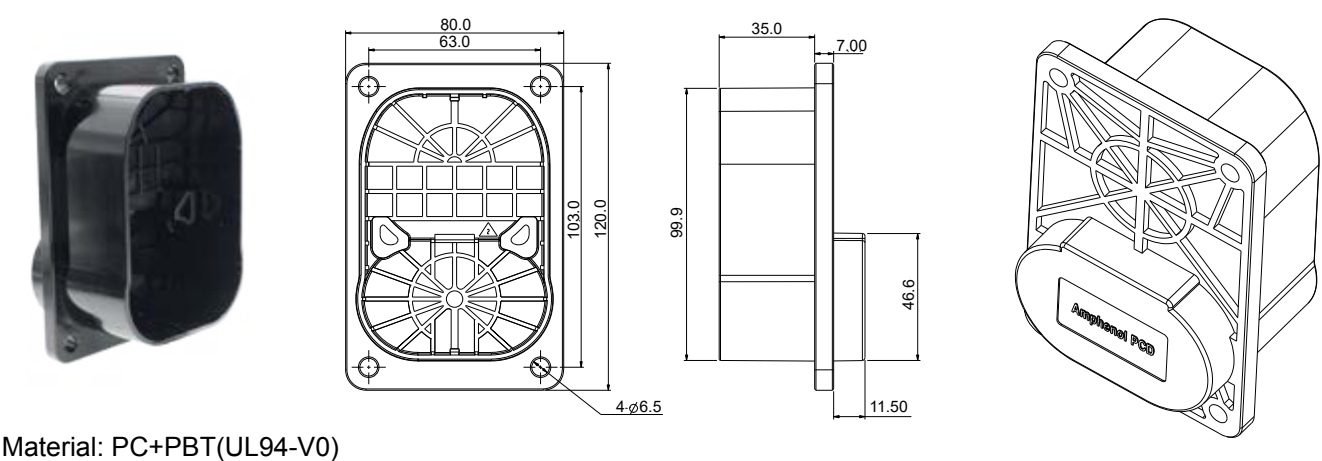
Vehicle connector

P/N	Rated current (DC)	DC cable size	Temperature sensor
HVCOCMTR8PF516	65A	16mm ²	PT1000
HVCOCMTR8PF550	125A	50mm ²	PT1000
HVCOCMTR8PF570	200A	70mm ²	PT1000

HOLDER FOR PLUG

P/N: C-C220027208

(Connectors do not include, please order seperately)



EXCEL|MATE CC SAE TYPE1 AC CONNECTOR - TECHNICAL CHARACTERISTICS

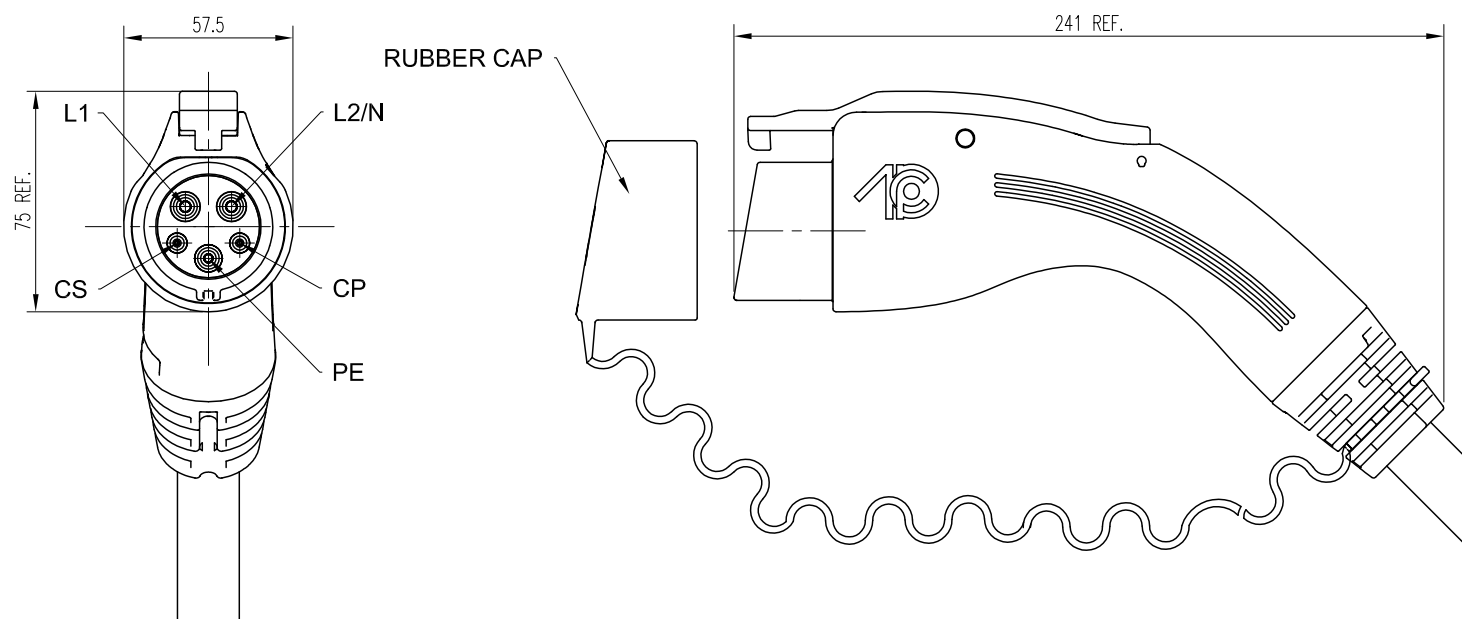


KEY FEATURES:

Compliant with:
SAE J1772

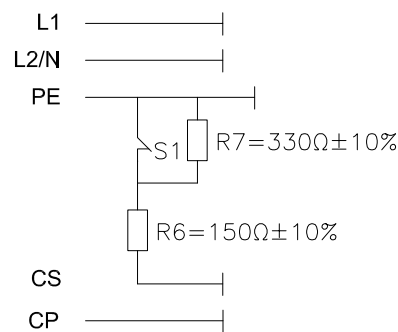
MECHANICAL	
Mating cycles	> 10,000 cycles
Insertion force	< 60N
ELECTRICAL	
Rated current	L1, L2 : 16A, 20A, 32A, 48A CS, CP: 2A
Rated voltage	L1, L2 : 240V AC CS, CP: 30V
Withstand voltage	2000V AC
Insulation resistance	> 100MΩ (500V DC)
ENVIRONMENTAL	
Protection degree	IP55 (mated)
Ambient temperature	-30°C to 50°C
MATERIAL	
Shell	Nylon
Shell color	Black / white
Contact	Copper alloy, silver or nickel plating
Inserts	Thermoplastic
Sealing gasket	Rubber or silicon rubber
Insulator inflammability	UL94V0

SAE TYPE1 AC CONNECTOR DIMENSIONS



SAE TYPE1 AC CONNECTOR - CIRCUIT DIAGRAMS

DIAGRAM:



PART NUMBER

SAE TYPE 1 CONNECTOR

Shell color: Black



Part Number (without cable)		
16A	1-Phase	HVCOSAEMR3PF501RL0000
20A	1-Phase	HVCOSAEMR3PF502RL0000
32A	1-Phase	HVCOSAEMR3PF506RL0000
48A	1-Phase	HVCOSAEMR3PF510RL0000

Compliant with SAE1772

Configuration:
240V | 16A, 20A, 32A or 48A | 1-phase

Shell color: White



Part Number (without cable)		
16A	1-Phase	HVCOSAEMR3PF501RL0000W
20A	1-Phase	HVCOSAEMR3PF502RL0000W
32A	1-Phase	HVCOSAEMR3PF506RL0000W
48A	1-Phase	HVCOSAEMR3PF510RL0000W

Compliant with SAE1772

Configuration:
240V | 16A, 20A, 32A or 48A | 1-phase

SAE TYPE 1 CONNECTOR



Current	Cable size			
	48A	32A	20A	16A
L1,L2/N	8 AWG	10 AWG	12 AWG	14 AWG
PE	10 AWG	10 AWG	12 AWG	14 AWG
CS,CP	18 AWG			

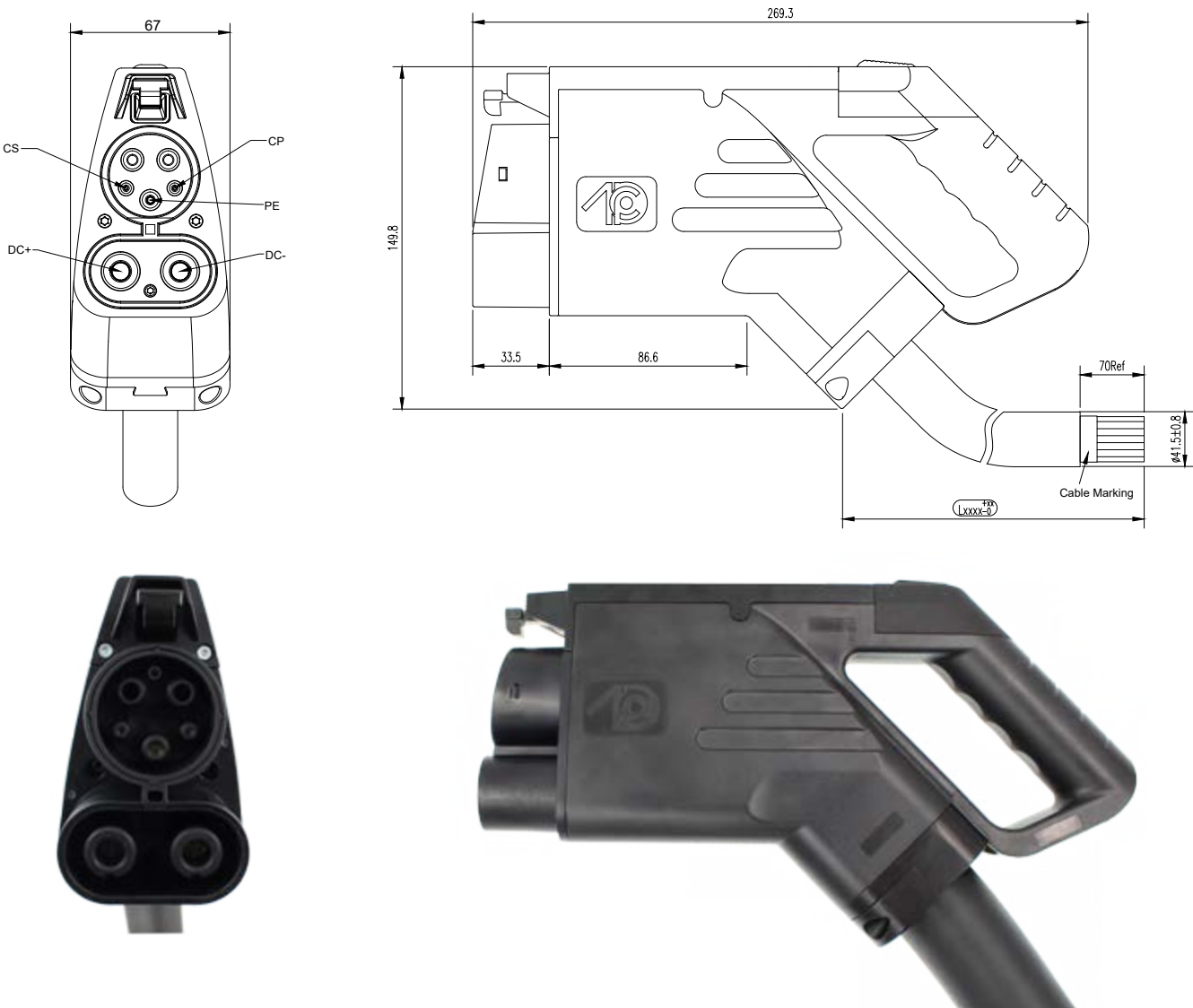


KEY FEATURES:

Compliant with:
SAE J1772
IEC 62196-3

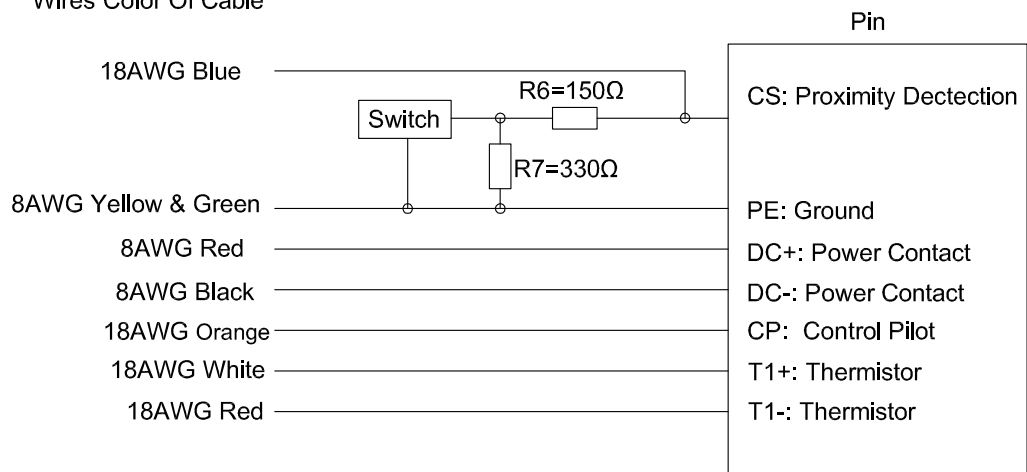
MECHANICAL	
Mating cycles	> 10,000 cycles (unloaded)
Insertion / withdrawal force	< 75N
ELECTRICAL	
Rated current	200A Max
Rated voltage	600V DC
Contact resistance	0.35mΩ Max
Insulation resistance	> 100MΩ
Temperature sensor	PT1000 The two power contacts DC+ and DC- are monitored by temperature-dependent resistor sensors
ENVIRONMENTAL	
Protection degree	3R
Ambient temperature	-30°C to 50°C
MATERIAL	
Shell	Nylon
Contact	Copper alloy, silver or nickel plating
Inserts	Thermoplastic
Sealing gasket	Rubber or silicon rubber
Insulator inflammability	UL94V0

SAE COMBO VEHICLE CONNECTOR DIMENSIONS

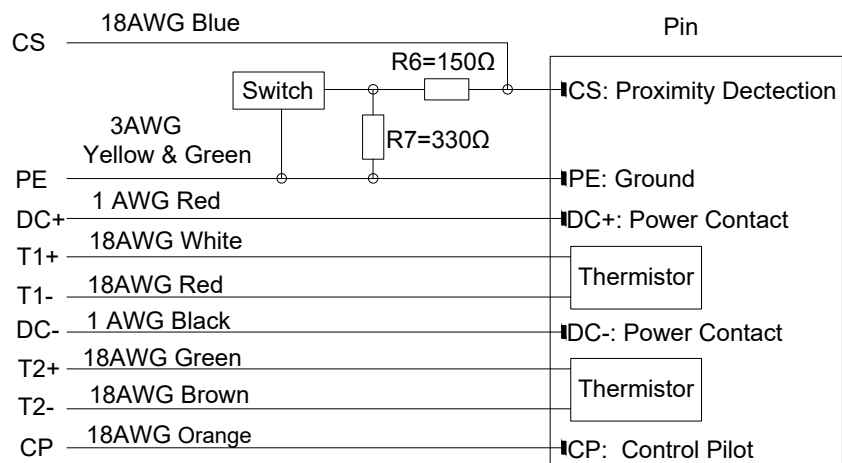


SAE COMBO VEHICLE CONNECTOR - CIRCUIT DIAGRAMS

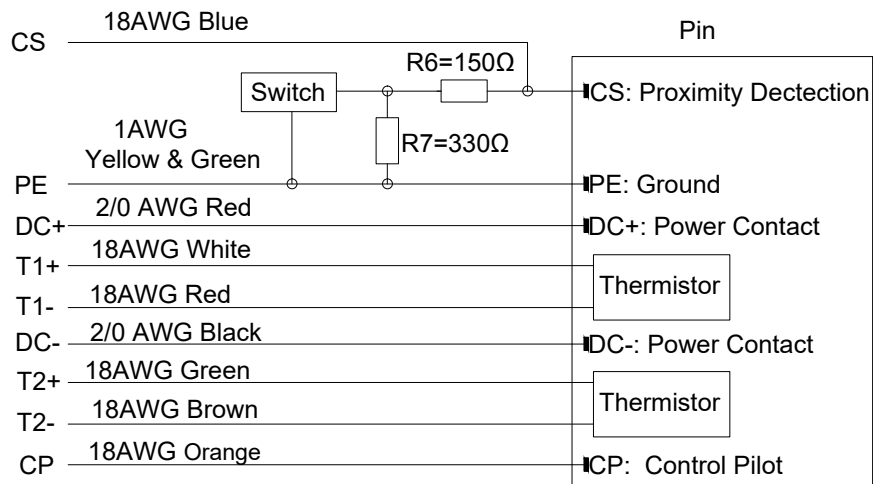
65A Pin And Cable For EV Connector Definition
Wires Color Of Cable



125A Pin And Cable For EV Connector Definition
Wires Color Of Cable



200A Pin And Cable For EV Connector Definition
Wires Color Of Cable



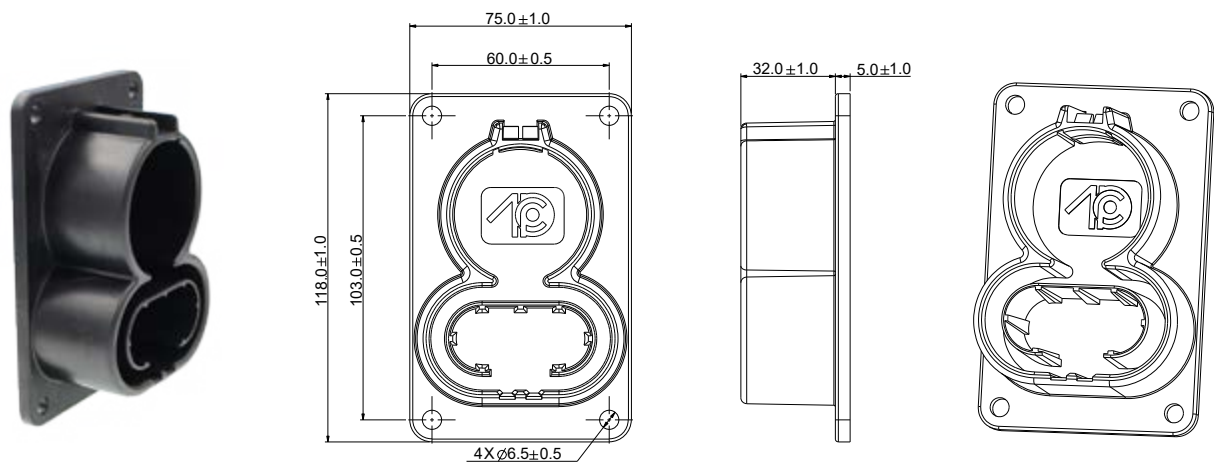
HOW TO ORDER | SAE COMBO

SAE Combo [Vehicle Connector](#)

	HVCO	SAE	M	125A	LXXXX	XXXX
SAE: SAE Combo						
Connector type: M: Vehicle Connector						
Rated current DC: 65A: 65A 125A: 125A 200A: 200A						
Cable length: LXXXX: Cable length (Unit in mm)						
Cable accessories: XXXX: Cable accessories or customer code						

HOLDER FOR PLUG

P/N: [C-P03BP00156](#)
(Connectors do not include, please order seperately)



Material: Thermoplastic (UL94-V0)

EXCEL|MATE CC1 VEHICLE INLET - TECHNICAL CHARACTERISTICS

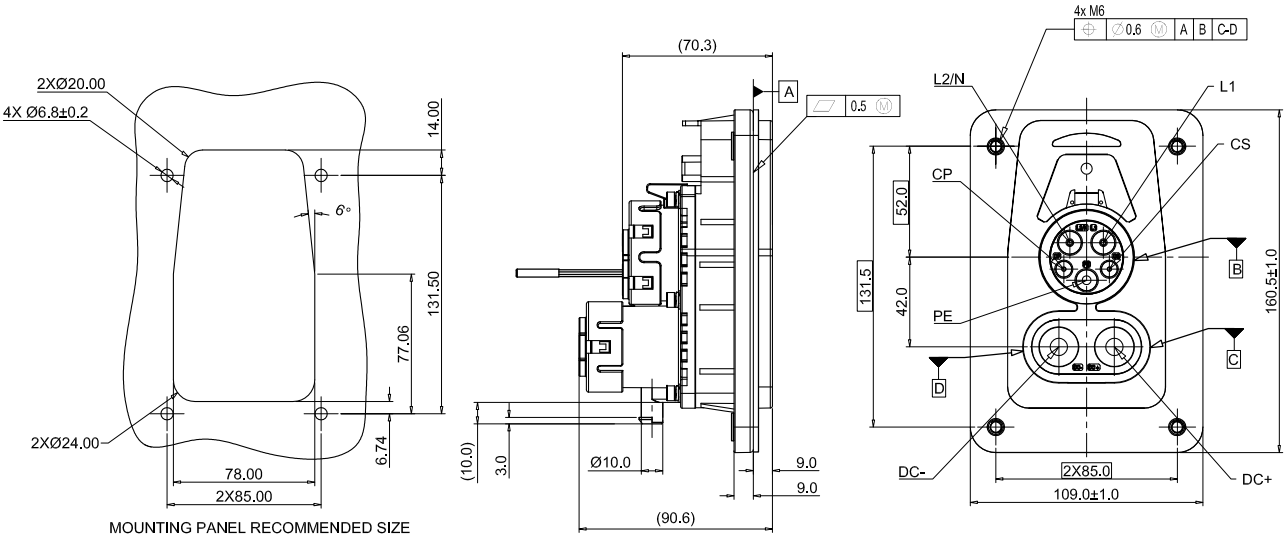


KEY FEATURES:

Compliant with:
IEC 62196-1
IEC 62196-2
IEC 62196-3
UL2251
SAE J1772

MECHANICAL	
Mating cycles	> 10,000 cycles (unloaded)
Insertion / withdrawal force	< 100N
ELECTRICAL	
Rated current	200A Max
Rated voltage	1000V DC
Contact resistance	0.35mΩ Max
Insulation resistance	> 100MΩ
Temperature sensor	PT1000 The two power contacts DC+ and DC- are monitored by temperature-dependent resistor sensors
ENVIRONMENTAL	
Protection degree	IP44 (Plugged in) IP55 (In "road" position)
Ambient temperature	-30°C to 50°C
MATERIAL	
Shell	Nylon
Contact	Copper alloy, silver or nickel plating
Inserts	Thermoplastic
Sealing gasket	Rubber or silicon rubber
Insulator inflammability	UL94V0

CCS1 VEHICLE INLET AC+DC DIMENSIONS



Rated voltage and current	Functions
250V 48A	L1
250V 48A	L2 / N
-	PE (Protective Ground/Earth)
1000V 200A, 125A, 65A	DC+
1000V 200A, 125A, 65A	DC-
30V 2A	CP (Control pilot)
30V 2A	PP (Proximity)

CCS1 Vehicle inlet AC + DC

Socket-inlet



Part Number (without cable)		
AC	DC	Part Number
250V / 48A	1000V / 200A	HVCOSF003
250V / 48A	1000V / 125A	HVCOSF005
250V / 48A	1000V / 65A*	HVCOSF007

Compliant with IEC 62196-1/2/3, UL2251 and SAE J1772

Configuration:

250V | 48A | 1-phase

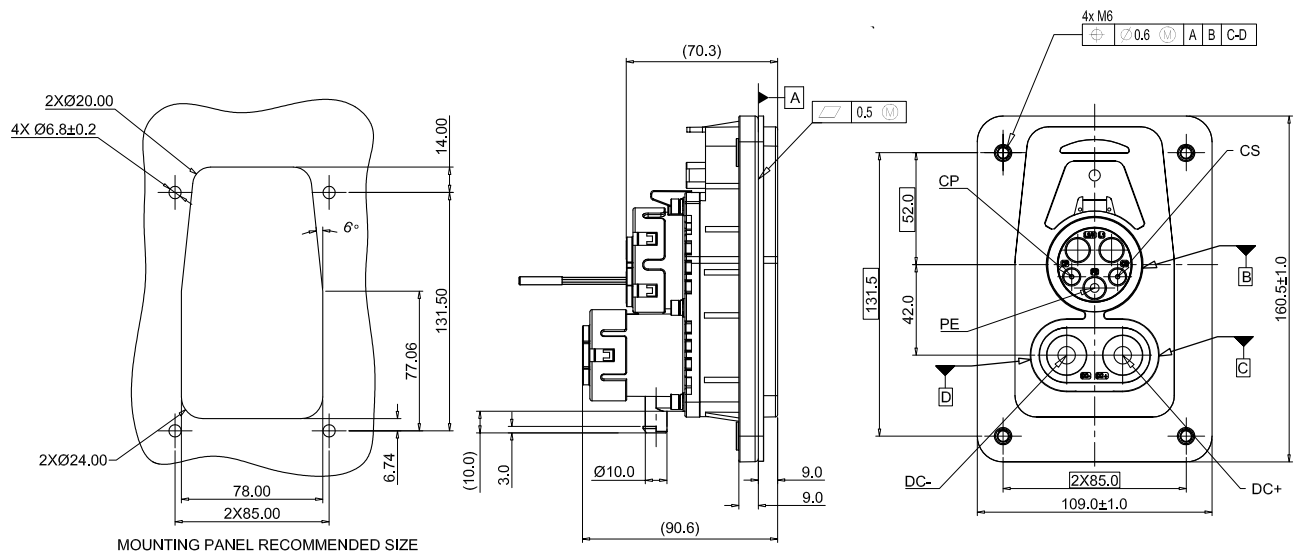
1000V | 65A, 125A or 200A | 3-phase

Electronic lock available

12 o'clock

Remark: 65A* Not tooled up, can be tooled up on request. Contact us.

CCS1 VEHICLE INLET DC DIMENSIONS



Rated voltage and current	Functions
-	PE (Protective Ground/Earth)
1000V 200A, 125A, 65A	DC+
1000V 200A, 125A, 65A	DC-
30V 2A	CP (Control pilot)
30V 2A	PP (Proximity)

CCS1 Vehicle inlet DC

Socket-inlet



DC	Part Number
1000V / 200A	HVCOSF004
1000V / 125A	HVCOSF006
1000V / 65A*	HVCOSF008

Compliant with IEC 62196-1/2/3, UL2251 and SAE J1772

Configuration:
1000V | 65A, 125A or 200A | 3-phase

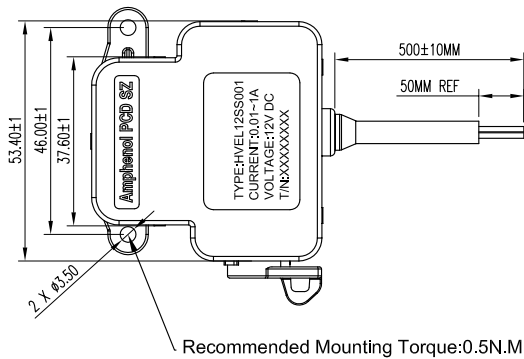
Electronic lock available
12 o'clock

Remark: 65A* Not tooled up, can be tooled up on request. Contact us.

LOCKING ACTUATOR

Electronic lock | AMPHENOL PCD SHENZHEN (12V)

4 wire solution is available for both 12V



P/N (12V): HVEL12SS001

TYPE	RED	BLACK	WHITE	BLUE
UNLOCKING	+	-	SIGNAL($R_U=1k\Omega$)	
LOCKING	-	+	SIGNAL($R_L=11k\Omega$)	



12 o'clock



12 o'clock

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Notes:

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