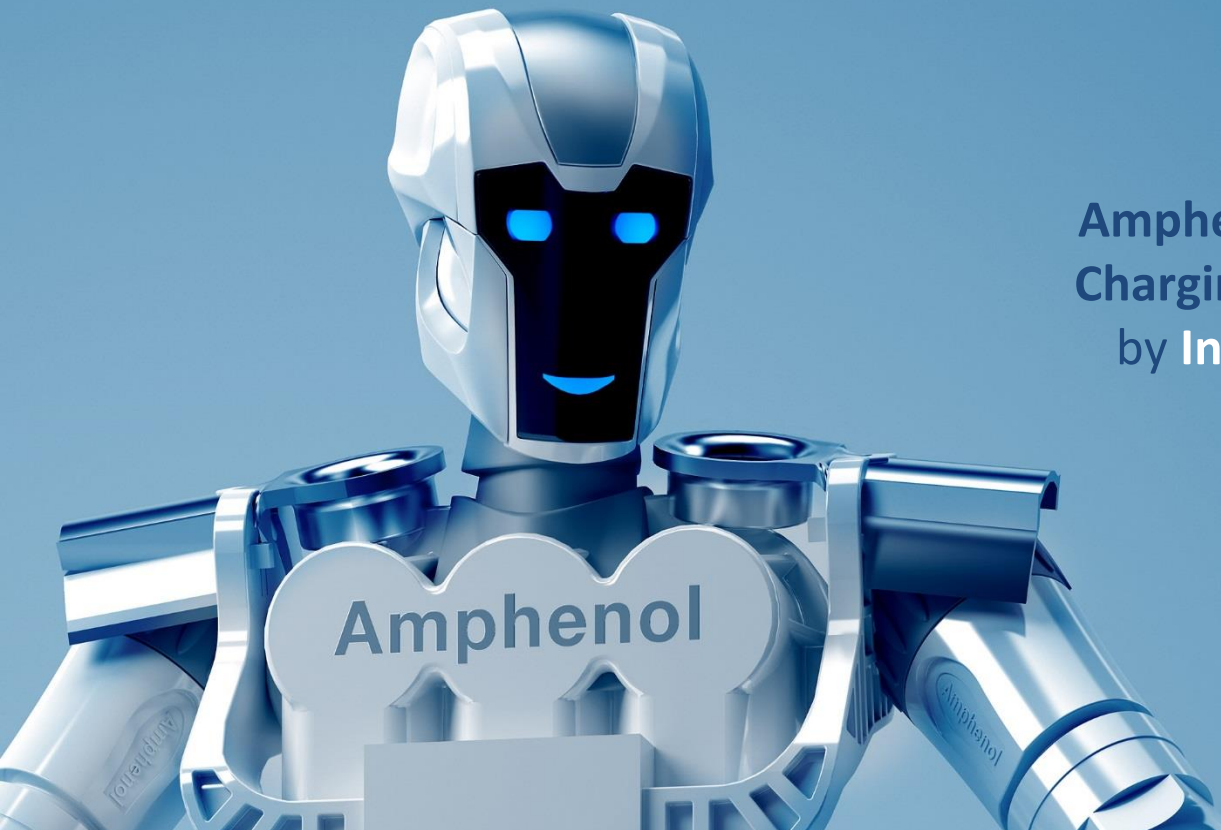




**Amphenol Industrial EV
Charging** brought to you
by **Inelco Hunter Ltd**

TYPES OF CHARGING CONNECTORS



CCS - The Combined Charging System is a standard for charging electric vehicles. It can use Combo 1 (CCS1 - NA) or Combo 2 (CCS2 -Europe) connectors to provide power at up to 350 kilowatts (kW) (max 500 A).

NACS - The North American Charging Standard (NACS) is an EV charging connector type developed by Tesla and opened for use to other manufacturers in 2022. It is not yet considered an industry standard but is currently under review with the Society of Automotive Engineers (SAE) for such purposes.

MCS - The Megawatt Charging System is a charging connector under development for large battery electric vehicles. The connector will be rated for charging at a maximum rate of 3.75 megawatts (3,000 amps at 1,250 volts direct current (DC)

Amphenol

INDUSTRIAL PRODUCTS GROUP

EV Charging



NACS / TESLA



AC NACS
40A,
50A, 80A



DC NACS
200A, 250A,
375A, 400A



DC NACS
Liquid
Cooled 600A



NACS Inlet
200A to 600A

MCS



MCS
Passive
380A+



MCS Liquid
Cooled
1500A



MCS Inlet
Passive
Up to 3000A

CCS1 UL



CCS1 Plug
HPC LCC
500A (*600A)



CCS1 Copper
125A, 150A,
200A, 250A,
300A, 350A
380A, 400A



CCS1 Ultra
Thin
40A, 65A, 80A



CCS1 Inlet
65A – 500A

AC SAE J1772



AC SAE Plug
16A to 80A



AC SAE – CAC
32A



AC SAE Portable
Mode 1
16A to 32A



AC SAE Inlet
16A to 80A

CCS2 IEC



CCS2 Plug HPC
LCC 500A
(*600A)



CCS2 Copper
150A, 200A,
250A, 400A



CCS2 Ultra
Thin
40A, 65A, 80A



CCS2 Inlet
65A – 500A

AC IEC



IEC Plug
20A, 32A



IEC Jumper
20A, 32A



IEC Shutter



IEC AC
Portable
Mode 1
16A/20A, 32A

GB/T



GB/T HPC LCC
600A



GB/T DC
80A to 250A



GB/T
Combo Inlet



GB/T Inlet
AC or DC

GB/T

☐ VEHICLE CONNECTOR :

- CURRENT RATING: AC 16A /32A, DC 80A / 125A / 250A
- CABLE UP TO 70MM²

☐ VEHICLE INLET:

- CURRENT RATING: UP TO 500A
- CABLE UP TO 150MM²

☐ IP55 MATED

☐ MATING CYCLES 10000

☐ AMBIENT TEMPERATURE -30C +50C

☐ RIGHT ANGLE AND STRIGHT CABLE EXIT ON RECEPTACLE

☐ PROTECTION CAP ON RECEPTACLE

☐ ELOCK AVAILABLE



AC IEC TYPE 2

❑ SOCKET OUTLET & VEHICLE INLET:

- 480V, AC 20A, 32A

❑ PLUG & VEHICLE CONNECTOR:

- CABLE 2.5MM2 = 20A
- CABLE 6.0MM2 (4MM2 SKINNY) = 32A

❑ 1-PHASE & 3-PHASE

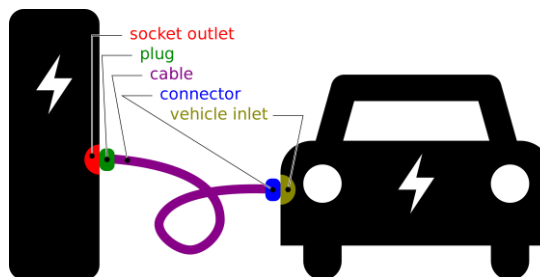
❑ IP55 MATED

❑ MATING CYCLES 10000

❑ PROTECTION CAP

❑ ELOCK AVAILABLE 12V & 24V

❑ CHARGING MODE: 2,3,4



SHUTTER



COMPETITION: MENNEKES, SCAME, DEGSON



AC IEC TYPE 1

❑ CONNECTOR & VEHICLE INLET:

- CONNECTOR AC 32A, 50A, 80A
- INLET 16A, 32A, 48A, 80A

❑ IP55 MATED

❑ L1, L2 : 240V AC

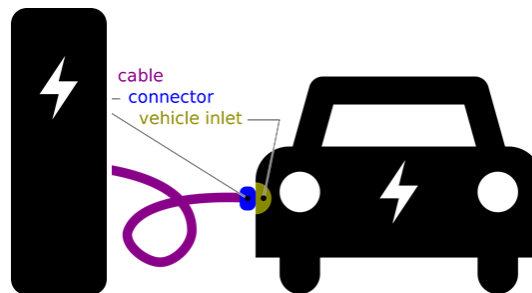
❑ CS, CP: 30V

❑ AMBIENT TEMPERATURE -30C +50C

❑ MATING CYCLES 10000

❑ PROTECTION CAP

❑ ELOCK AVAILABLE 12V & 24V



CCS2 IEC – NON COOLED

- ❑ VEHICLE CONNECTOR :
 - CONNECTOR CURRENT RATING: 150A / 200A / 250A / 380A / 400A
 - CABLE SIZES 2X35, 2X50, 2X70, 2X2X50MM2
- ❑ VEHICLE INLET:
 - CURRENT RATING: UP TO 500A
 - CABLE UP TO 150MM2 OR BUSBAR
 - LED OPTION AVAILABLE
 - RIGHT ANGLE AND STRIGHT CABLE EXIT ON VEHICLE INLET
- ❑ IP44 MATED, IP67 ENCLOSURE AVAILABLE
- ❑ MATING CYCLES 10000 (20000 AVAILABLE)
- ❑ CHANGEABLE FRONT AVAILABLE
- ❑ AMBIENT TEMPERATURE -30C +50C
- ❑ PROTECTION CAP
- ❑ ELOCK AVAILABLE



	Remove the 4 screws (M3) in front of the CC2 charging connector.	FRONT-END OF THE CONNECTOR 1
	 The 4 screws (M3) are removed.	TAKING OUT THE SCREWS 2
	Remove the front cover of the charging connector.	DISMOUNTING THE FRONT COVER 3
	The front cover is detached.	AFTER DISASSEMBLING 4
	Insert the 2 corresponding screws (M5) into the new terminals	FRONT-END OF THE CONNECTOR 11
	M5 screws Torque: 2.5 to 3N.m	SCREWING BACK UP 12
	Place those 4 screws (M3) into their corresponding slots.	FRONT-END OF THE CONNECTOR 15
	M3 screws Torque: 0.9 to 1N.m	SCREWING BACK UP 16

CCS2 IEC – DC WALL BOX (ULTRA THIN)

- ❑ VEHICLE CONNECTOR :
 - CONNECTOR CURRENT RATING: 40A / 65A / 80A / 150A
 - 80A WITH AND WITHOUT HANDLE
 - 150A WITH HANDLE
 - CABLE SIZES 2x6, 2X10, 2X16, 2X35MM2

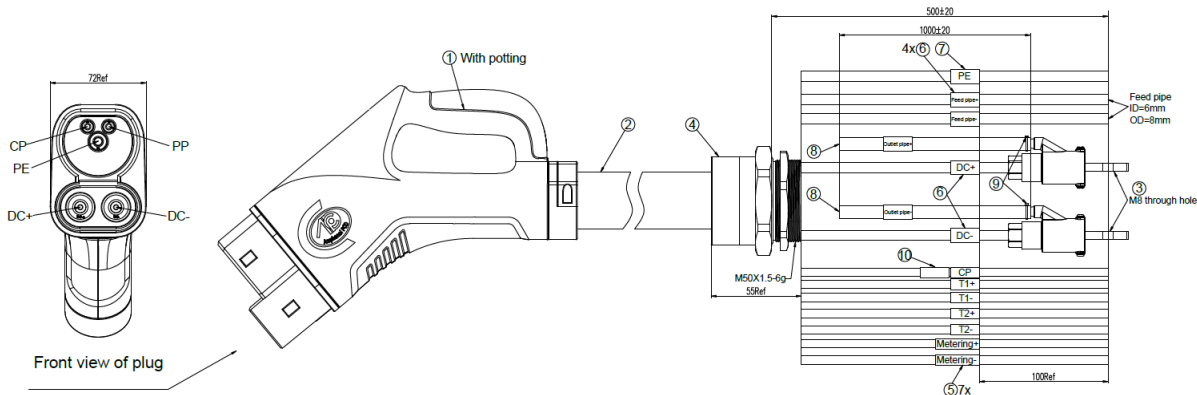
- ❑ IP44 MATED, IP67 ENCLOSURE AVAILABLE
- ❑ MATING CYCLES 10000
- ❑ AMBIENT TEMPERATURE -30C +50C



 VEHICLE CONNECTOR :

- LIQUID COOLED CONNECTOR CURRENT RATING: 500A IEC (*600A TESTED)
- OPTION WITH AND WITHOUT HANDLE
- COOLANT OIL (WATER GLYCOL IN Q3)

- ☐ IP44 MATED, IP67 ENCLOSURE AVAILABLE
- ☐ MATING CYCLES 10000 AVAILABLE
- ☐ AMBIENT TEMPERATURE -30C +50C





Chiller		
Chiller maker	Model for US Market	Model for EU Market
Technotrans	P502 HPC (2.8kw)	P502 HPC NACS CCS
Technotrans	P504 HPC (4.6kw)	P503 MCS
Treolica	TREKIT3401-D (4.5kw)	RD3-22003 MCS
Hydac	NA	4470463 NACS CCS

Liquid Cable	Coolant				
	Xiameter PMX-200	DCF 18	FUCHS TF 8016 Biodegradable for EU	Wacker AK-10	Panolin Trafosyn 2

CCS

Technology

Charging power:
up to 500 kW

Application

Passenger vehicles and
some light commercial
vehicles

Communication

Power Line Communication

Footprint

Small $<1\text{m}^2$



MCS

Technology

Charging power:
up to 3.75 MW

Application

Heavy duty vehicles,
en-route charging

Communication

Automotive ethernet
(higher reliability)

Footprint

Large $>3\text{-}5\text{m}^2$



MCS

☐ VEHICLE CONNECTOR :

- 380A NON COOLED
- CABLE SIZES 2X2X50MM2
- 1500A COOLED
- CABLE SIZES 2X2X35MM2

☐ VEHICLE INLET:

- CURRENT RATING: UP TO 3000A (WTIH COOLING)

☐ VOLTAGE 1250V DC

☐ IP67 ENCLOSURE, IP69

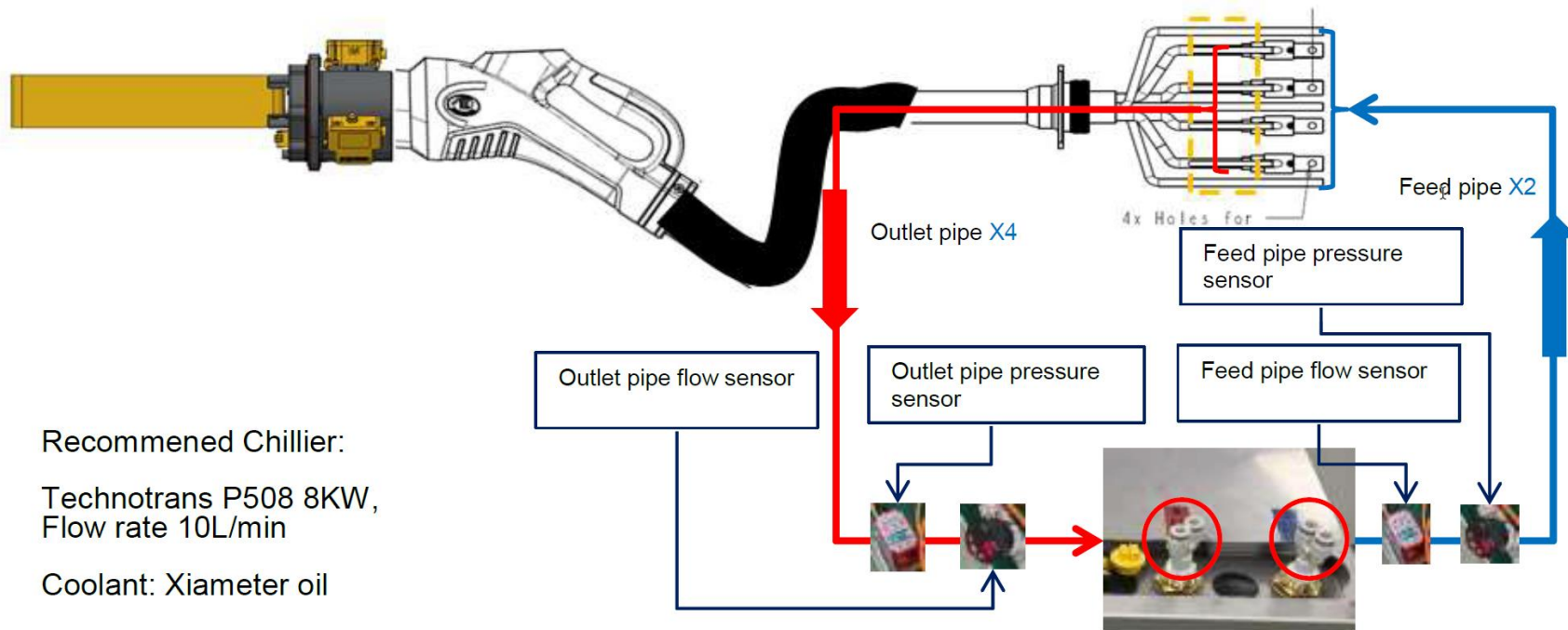
☐ MATING CYCLES 20000

☐ AMBIENT TEMPERATURE -40C +50C

☐ PROTECTION CAP

☐ ELOCK AVAILABLE





NACS (TESLA CONNECTOR)

☐ VEHICLE CONNECTOR :

- AC 40A, 50A, 80A
- DC NON COOLED 200A, 250A, 375A
- DC LIQUID COOLED 600A
- WITH AND WITHOUT UHF

☐ VEHICLE INLET:

- CURRENT RATING: UP TO 600A
- BUS BAR OPTION AVAILABLE
- WITH LED OPTION AVAILABLE

☐ VOLTAGE 1000V DC

☐ IP67 ENCLOSURE, IP69

☐ MATING CYCLES 20000

☐ AMBIENT TEMPERATURE -30C +50C

☐ PROTECTION CAP

☐ ELOCK AVAILABLE







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