6 MANUAL BUS/TRUCK CHARGING (up to 1,5 MW, I_{MAX} ≥ XXX) STAND XX.XX.2019 – V 1.0

BMW, Liertz
Fokus auf Schnittstelle EV/EVSE: Ladetechnologie Nr.6,
27.11.2018, V 1.0

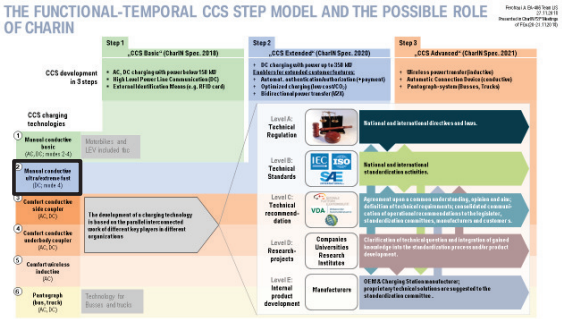
Charging System Specifications

				Documents	Content	Ecosys	1	2	Responsible
S	X			1. Directive 2014/96/EU	Altern. fuel infrastructure	EVSE		?	
Standardization	X			2. FprEN Final Draft 17186 Ed.1	Electricity fuel labelling	EV-EVSE			
	X			3. DIN SPEC 70121:2014	DC PLC	EV-EVSE			
	X	X		4. **ISO 15118-1:2013 Ed.1**	AC/DC PLC general	EV-EVSE			
	X	X		5. **ISO 15118-2:2014 Ed.1**	AC/DC network, application	EV-EVSE			
	X	X		6. **ISO 15118-3:2015 Ed.1**	AC/DC physical, data link	EV-EVSE			
	X	X		7. IEC 61851-1:2017 Ed.3 Prio 1: Ed.4 mitentwickeln	PWM	EV-EVSE			
	X	X		8. IEC 61851-21-2:2017 Ed.1	Off-board charger EMC	EVSE			
	X	X		9. IEC 61851-23:2014 + COR1:2016 Ed.1	DC charging	EV-EVSE			
	X	X		10. IEC 62196-1:2014 Ed.3	AC/DC general	EV-EVSE			
	X	X		11. **IEC CD 62196-3 Amd.1 Ed.1**	DC Combo 1/2	EV-EVSE			
	X	X		12. **IEC/TS CD 62196-3-1 Ed.1**	DC Combo 1/2, therm. manag.	EV-EVSE			
	X	X		13. ISO 17409:2015 Ed.1	AC/DC electr. Safety	EV			
	X	X		14. ISO 6469-3:2011 Ed.1	AC/DC electr. Safety	EV			
	X	X		15. IEC FDIS 62893-1 Ed.1	AC/DC general	EV-EVSE			
	X	X		16. **IEC CD 62893-4-1 Ed.1**	DC	EVSE			
	X	X		17. **IEC WD 62893-4-2 Ed.1**	DC, therm. manag.	EVSE			
		X		18. SAE J1772:2017 V7 revised	AC/DC, Type 1, Combo 1	EV-EVSE			
		X		19. SAE J2836/2:2011 V1 issued	DC PLC use cases	EV-EVSE			
		X		20. SAE J2847/2:2015 V3 revised	DC PLC (layer 3-7)	EV-EVSE			
		X		21. **SAE J2931/1:2014 V3 revised**	DC PLC (layer 3-6)	EV-EVSE			
		X		22. SAE J2931/4:2014 V2 revised	DC PLC (layer 1-2)	EV-EVSE			
		X		23. **SAE J2931/7:2018 V2 revised**	DC PLC (TLS)	EV-EVSE			
		X		24. SAE J2953/1:2013 V1 issued	AC/DC (IOP CP and Prox)	EV-EVSE			
CharIN	X			25. DIN 70121 Amendment	DC PLC (EIM, 80kW)	EV-EVSE			
	X	X		26. IEC 61851-1 Amendment	AC/DC charging, PWM	EV-EVSE			
	X	X		27. IEC 61851-23 Amendment	DC charging	EV-EVSE			
	X	X		28. CCS 1.0 technical requirements spec. **v X.Y**	General specification, closing gaps in standards	EV-EVSE			
	X	X		29. CCS design guide	General specification	EV-EVSE			
	X			30. Guideline DC CCS 1.0 (DIN Spec)	DC PLC guideline	EV-EVSE			
	X	X		31. CCS DC power classes	DC charging specification	EV-EVSE			

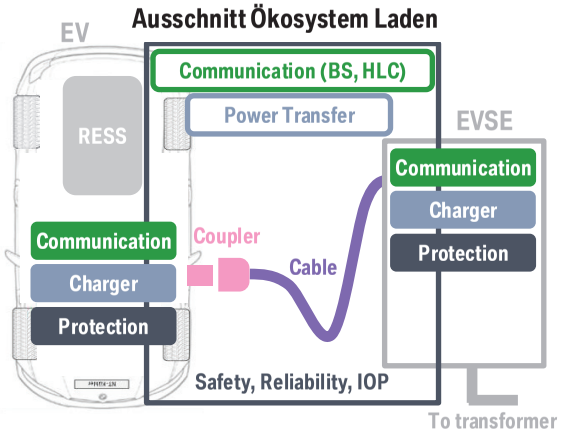
X: Documents applicable for this market.

Link through V-model

Bezug zum CCS Stufenmodell



Ausschnitt Ökosystem Laden



1	**Availability:**	available (published, e.g. on CharIN website)	not available (not yet published)	
2	**Quality:**	satisfactory specification	small amendments needed	severe amendments needed

Charging System Test Specifications

Documents	1	2	Responsible
32. DIN SPEC 70122:2018			
33. **ISO 15118-4:2018 Ed.1**			
34. **ISO 15118-5:2018 Ed.1**			
7. IEC 61851-1:2017 Ed.3			
8. IEC 61851-21-2:2017 Ed.1			
35. DIN VDE V 0122-2-300:2016			
10. IEC 62196-1:2014 Ed.3			
11. **IEC CD 62196-3 Amd.1 Ed.1**			
12. **IEC CD2 62196-3-1 Ed.1**			
13. ISO 17409:2015 Ed.1			
14. ISO 6469-3:2011 Ed.1			
15. IEC FDIS 62893-1 Ed.1			
36. IEC FDIS 62893-2 Ed.1			
17. **IEC WD 62893-4-2 Ed.1**			
18. SAE J1772:2017 V7 revised			
20. SAE J2847/2:2015 V3 revised ?			
21. **SAE J2931/1:2014 V3 revised ?**			
22. SAE J2931/4:2014 V2 revised ?			
23. **SAE J2931/7:2018 V2 revised ?**			
37. SAE J2953/2:2014 V1 issued			
38. SAE J2953/3:2016 V1 WIP			
39. CCTS TestSpecs DIN 70122			
40. CCTS TestSpecs IEC 61851-1			
41. SLAM TestSpecs IEC 61851-1			
42. CCTS TestSpecs IEC 61851-23			
43. SLAM TestSpecs ISO 17409			
44. SLAM TestSpecs lessons learned			

THE FUNCTIONAL-TEMPORAL CCS STEP MODEL

AND THE PARALLEL WORK IN DIFFERENT ORGANIZATIONS

DRAFT

CHARIN

	Step 1 „CCS Basic“ (CharIN guideline 02/19)	Step 2 „CCS Extended“ (CharIN guideline 12/2019)	Step 3 „CCS Advanced“ (CharIN guideline 12/2021)
CCS development in 3 steps	▪ AC, DC charging with a power of < 150 kW ▪ External identification e.g. with RFID card	+ DC charging with a power of up to ≥ 400 kW + Additional features, e.g. automatic authentication/authorization and bidirectional charging	+ Wireless power transfer (inductive) + Automatic connection device (conductive) + Additional features
CCS charging technologies			
① **Manual conductive basic** (AC, DC)			
② **Manual conductive ultra/extreme fast** (DC)			
③ **Comfort conductive side coupler** (AC, DC)	The development of an interoperable charging technology is based on the parallel interconnected work in different levels.		
④ **Comfort conductive underbody coupler** (AC, DC)			
⑤ **Comfort wireless inductive** (AC)			
⑥ **Pantograph (bus, truck)** (AC, DC)			

Level A: Legislation		National and international laws, directives and acts.
Level B: Standardization	IEC ISO SAE INTERNATIONAL	National and international charging standards.
Level C: Representation of interests	ACEA CHARIN SIAM VDA Verband der Automobilindustrie	Technical recommendations, position papers and guidelines.
Level D: Research	Companies Universities Research Institutes	Technical knowledge, prototypes, scientific publications.
Level E: Product development	Manufacturers	Interoperable charging products.