

<b>Bidirectional DC charger</b>	<b>Ferroamp V2X 20 kW</b>
<b>Bidirectional charging</b>	<b>Bidirectional charging</b>
Maximum charging power	+/- 20 kW
Maximum charging current	+/- 50 A
Battery Voltage	200 – 900 VDC
Charging standard	CCS2
Charging cable	Fixed cable 4.5 m
<b>DC Microgrid<sup>1</sup></b>	
Voltage range	650 – 900 VDC
Connectivity	L+, L-, PE, max 6 mm <sup>2</sup>
Fuse	Max 32A gPV
<b>Interface</b>	
Display	7" touch
Communication	Ethernet
Protocol to charging operator Or aggregator	OCPP 1.6 OCPP 2.0.1
Vehicle Protocols	DIN Spec 70121 ISO 15118-2 ISO 15118-20
Local Control Protocol	MQTT
<b>Functionality</b>	
Charging control	Manually via display, via mqtt, via OCPP
Discharge control (V2X)	Manual via display MQTT from other control system <sup>2</sup> OCPP from aggregator / charging operator <sup>3</sup>
Features V2X <sup>4</sup>	Manual discharge, peak shaving, self consumption
<b>Physical</b>	
Ambient Temperature: Operation	-20 -- +40 °C
Relative humidity	5 – 95% RH
Height	< 2000 m
Protection class	IP43
Cooling	Forced with replaceable air filter
Noise level	60 dBA
Dimensions incl wall bracket	360 x 190 x 640 mm (W x D x H)
Weight	25 kg
Installation	Included wall bracket
Efficiency	>98.5% @ 20 kW
Protection features	Overvoltage, undervoltage, over temperature, short circuit, insulation fault
Compliance	IEC 61851-1, IEC 61851-23, EN 61000-6-2, EN 61000-6-3
Options	MID-certified DC energy meter WiFi

1) The V2X functionality requires that the DC microgrid is supplied by a bidirectional inverter with grid codes (e.g. Ferroamp EnergyHub)

2) External control system for V2X is not provided by Ferroamp or dc<sup>2</sup>

3) Controlling discharge via OCPP requires the car to have ISO15118-20

4) dc<sup>2</sup> intends to develop more features for V2X over time