EV ON-BOARD CHARGER + DC-DC CONVERTER

Features

- Universal AC input range 85-265VAC
- Input/output protections
- Intelligent charging modes
- Customized CAN communication optional
- 250/500kbs communication rate optional
- UDS bootloader and diagnostic optional
- IP67 enclosure, liquid cooled

Main Specifications

Part Number		Input Voltage	Output Voltage	Output Current	Ripple & Noise (mVp-p)
CAD332DF400-14152	OBC	85-265Vac	200-420Vdc	0-10A	≤±2%
	DC-DC	200-420Vdc	13.5Vdc	0-108A	300

Electrical Specifications

These specifications are valid over the converter's full ranges of input voltage output voltage and current, and operating temperature unless noted otherwise.

Input Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
OBC					
Input Voltage	AC input	85	220	265	Vac
Wakeup Voltage		9	12	16	Vdc
Bias Voltage		9	12	16	Vdc
Input Frequency		45	50	65	Hz
Input Current		-	-	32	A
Inrush Current		-	-	50	A
Current Draw of Wakeup		-	-	0.3	mA
Leakage Current		-	-	3	mA
Power Factor	≥50% load	0.99			

DC-DC					
Input Voltage		200	-	450	Vdc
Input Current		-	-	7	A
Quiescent Current		-	-	20	mA

Output Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
OBC					
Output Voltage		200	-	450	Vdc
Output Current		0	-	10	A
Output Power		-	-	3.3	KW
Output Current Accuracy	Typical Vin, full load, Ta = 25°C	-	-	±0.4	A
Output Ripple & Noise	20MHz bandwidth, with 0.1uF and 47uF capacitor, typical Vin	-	-	±2%	mVp-p
Output Wakeup Voltage		-	12	-	Vdc
Output Wakeup Current		-	-	200	mA
Efficiency	Typical Vin, full load, Ta = 25°C	94	-	-	%
DC-DC					
Output Voltage		9	-	16	Vdc
Rated Output Voltage		13.8	14	14.2	Vdc
Output Current		0	108	128	A
Output Power			1500	-	W
Maximum Output Power	Less than 6 min.	-	-	1800	W
Output Voltage Accuracy	Typical Vin, full load, Ta = 25°C	-	-	±1	%Vo
Output Ripple & Noise	20MHz bandwidth, with 0.1uF and 47uF capacitor, typical Vin	-	-	300	mVp-p
Efficiency	Typical Vin, full load, Ta = 25°C	94	-	-	%
Quiescent Current		-	-	0.3	mA
Dynamic Response	Typical Vin, full load, Ta = 25°C	-	-	200	ms

Protection Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
OBC					
Input Under-voltage Protection		75	80	85	Vac
Input Under-voltage Recovery	Auto-recovery	80	85	90	Vac
Input Over-voltage Protection		265	270	275	Vac
Input Over-voltage Recovery	Auto-recovery	260	265	270	Vac
Output Under-voltage Protection		190	195	200	Vdc
Output Under-voltage Recovery	Auto-recovery	195	200	205	Vdc
Output Over-voltage Protection		420	440	460	Vdc
Output Over-voltage Recovery	Auto-recovery	415	435	455	Vdc

Over Temperature Protection	Reduced output power	60	-	85	°C
(coolant temperature)	Shut down	95	-	-	°C
Output Short Circuit Protection	Shut down, auto-recovery				
DC-DC					
Input Under-voltage Protection		180	185	190	Vdc
Input Under-voltage Recovery	Auto-recovery	185	190	195	Vdc
Input Over-voltage Protection		460	465	470	Vdc
Input Over-voltage Recovery	Auto-recovery	430	440	450	Vdc
Output Under-voltage Protection		7.75	8	8.25	Vdc
Output Under-voltage Recovery	Auto-recovery	8.75	9	9.25	Vdc
Output Over-voltage Protection		15	16	17	Vdc
Output Over-voltage Recovery	Auto-recovery	12.75	14	15.25	Vdc
Over Temperature Protection	Reduced output power	65	-	85	°C
(coolant temperature)	Shut down	95	-	-	°C
Output Short Circuit Protection	Shut down auto-recovery				

Environmental Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
Operating Temperature	Automatically reduces the output power when the coolant temperature goes over 65°C.	-40	-	+85	°C
Storage Temperature		-40	-	+105	°C
Relative Humidity	No condensation	5	-	95	%
Altitude		-	-	5000	m
Cooling	Liquid cooled				
Ingress Protection	IP67				
Weight			8.4		kg
Acoustic Noise	QC/T 895-2011	-	-	60	dB

Safety Specifications

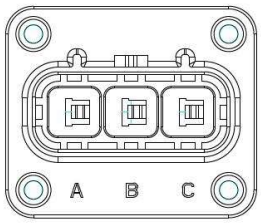
Parameter	Notes & Conditions	Min	Typical	Max	Unit
Isolation Voltage	Input-Output, 1 min.	2000	-	-	Vac
		2800	-	-	Vdc
Insulation Resistance		20	-	-	MΩ
Grounding Resistance	Case-Ground	-	-	0.1	Ω
Input Discharge	The input terminal voltage will drop below 60V within 1s after the input power is cut off				
Electric Clearance	GB/T 18488.1-2001				

Reliability Specifications

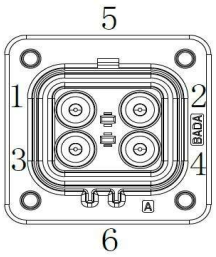
Parameter	Standard
Durability	QC/T 895-2011 QC/T 24347-2009
EMC	GB/T 18487.1-2001

Harmonic Current	GB17625.0-2003, CLASS A
Vibration	QC/T 413 – 2002 3.12 (ISO 16750-3 4.2.2.2)
Shock	ISO 16750-3 4.2.2.2
Salt Fog	QC/T 413 – 2002 3.13

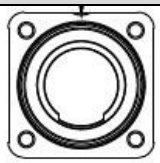
Input Connector Description

PIN NO.	Name	Model: XXC106-EV-P3Z	Mating Connector: XX106-EV-S3T
		Supplier: Xinxi	
A	N		
B	PE		
C	L		

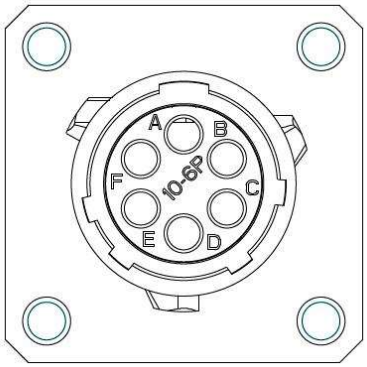
High Voltage Output Connector Description

PIN NO.	Name	Model: F02-629110-RA2	Mating Connector: F02-629110-PA2
		Supplier: BADA	
1	OBC out +		
2	OBC out -		
3	DC DC in +		
4	DC DC in -		
5	Interlock		
6	Interlock		

Low Voltage Output Connector Description

PIN NO.	Name	Model: X01-S01-T06S1-NM6	Mating Connector: X01-P01-T06S1-NOA
		Supplier: Xinxi	
1	Output +		

Signal Connector Description

PIN NO.	Name	Model: RTOW0106PN03	Mating Connector: RT0W6106SNHEC03
		Supplier: Amphenol	
A	CAN L		
B	CAN H		
C	CAN GND -		
D	13.8V +		
E	13.8V -		
F	Enable 12V		

Mechanical Parameters (unit: mm)