



Combo 6.6KW OBC+2.5KW DC/DC Converter Model No. AR2K5D6K6B-270S400L-I



Features

- 1 Output Power:
OBC: 6.6KW
DC/DC: 2.5KW
- 2 Input Voltage:
OBC: 85~265VAC
DC/DC: 270~450VDC
- 3 Output Voltage:
OBC: 270~450VDC
DC/DC: 9~16VDC
- 4 Dimensions: 279x202x68mm
- 5 Weight: ≤ 5.5 KG
- 6 Cooling System: Liquid, flow rate ≥ 6 L/min
- 7 Protection Level: IP67
- 8 Communication Method: CAN 2.0B

Specification

Description	Technical Specification
OBC Charging Mode	
Rated Output Power	6.6KW
Input Voltage Range	85~265VAC
Input Current	32A Max
Power Factor	0.98@rated input, output \geq half load
Output Voltage Range	270~450VDC
Max Output Current	22A
Efficiency	$\geq 92\%$ @rated input and output
Output Voltage Accuracy	$\leq \pm 1\%$
Output Current Accuracy	$\leq \pm 3\%$ @ $> 10A$; $\leq \pm 0.3A$ @ $< 10A$
Output Voltage Ripple Coefficient	$\leq \pm 5\%$
DC/DC Mode	
Input Voltage Range	270~450VDC
Rated Input Voltage	350VDC
Input Current	12A
Efficiency	$\geq 92\%$ @rated input and output
Output Voltage Range	9~16VDC
Rated Output Voltage	14VDC
Output Current	180A
Rated Power	2.5KW
Under Charging / Inverting State DCDC Max Output Power	2KW
Output Voltage Accuracy	$\leq \pm 1\%$
Output Voltage Ripple	$\leq 500mV_{pp}$ @20MHz
Output Voltage overshoot	$\leq 5\%$ Vout



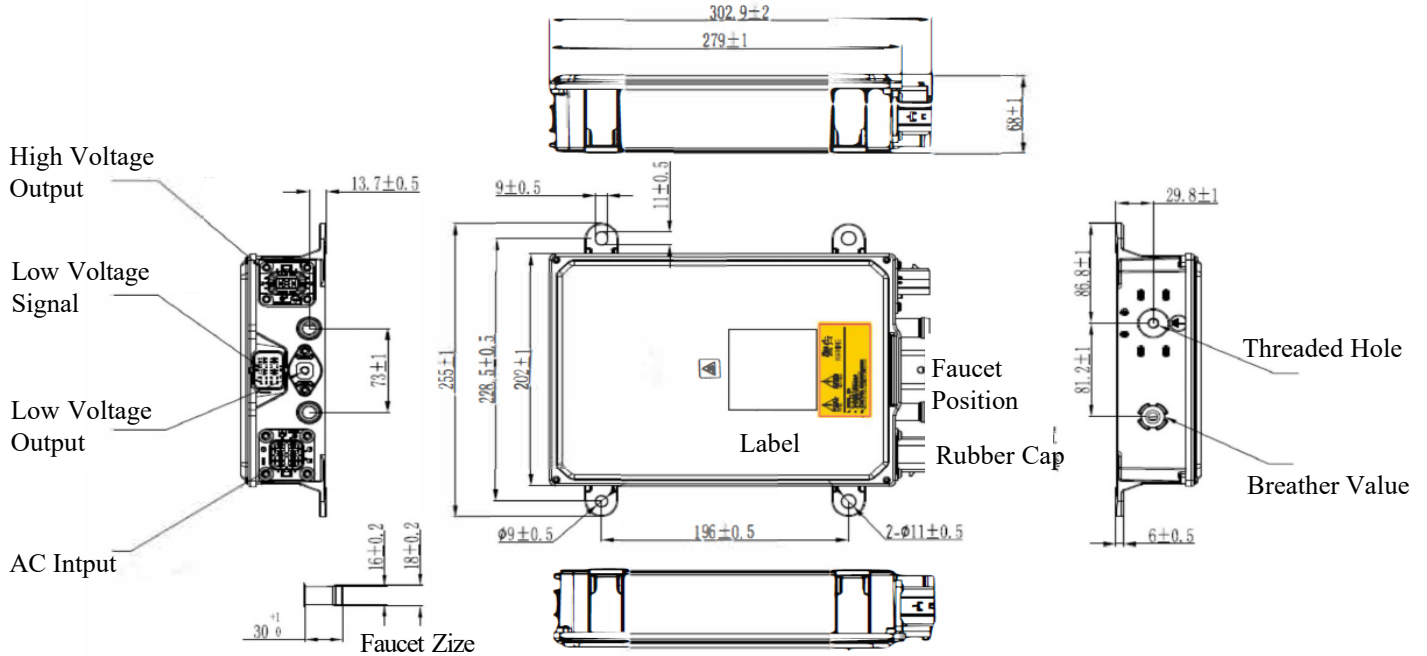
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Description	Technical Specification
Low-Voltage Input	
Input Voltage Range	9~16VDC (Normal work) ; 6~18VDC (communication is normal)
Quiescent Current	≤2mA (whole system)
CAN Communication	CAN 2.0B
HVIL Function	The high-voltage connector interlock signal is given by the low-voltage signal connector, and its status is detected by the vehicle
Wakeup Method	Hard wire, CAN
UDS Function	Optional
Boot Loader Function	Optional
AUTOSAR(4.3.1 network management)	Optional(the development time is 6 weeks and NRE needed)
Environmental Conditions	
Working Temperature	-40~85°C
Ambient Storage Temperature	-40~105°C
Working Environment Humidity	5%~95%, no condensation
Cooling Method	Liquid cooling
IP Rating	IP67
Cooling System	
Coolant Path	Nozzle diameter 16mm (outer diameter)
Coolant Requirements	50% water and 50% glycol
Coolant Temperature	Normal work: -40~+ 65 °C; Derating work: + 65~+ 85 °C
Coolant Flow	≥6L/min
Safety Features	
Dielectric Strength	AC input side to high voltage output side: 2800 VDC AC input side to low voltage output side (housing): 2800 VDC High voltage output side to low voltage output side (housing): 2800 VDC
Insulation Resistance	Test voltage 500 VDC AC input side to high voltage output side: ≥10 MΩ AC input side to low voltage output side (housing): ≥10 MΩ High voltage output side to low voltage output side (housing): ≥10 MΩ
Grounding Resistance	Resistance between charger case and PE <0.1 Ω



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Structural Parameters (unit : mm)



Product Interface

Connector Information

Pinout Definition	Receptacle		Plug Model	
	Model	Brand	Model	Brand
AC Input	YGC1174-EV-P(3+2)R/1	Yonggui	YGC1174-EV-S(3+2)P	Yonggui
High voltage output	YGC1174-EV-P(2+2)RA	Yonggui	YGC1174-EV-S(2+2)PA	Yonggui
Low voltage output	GH01-F200-1NNB-T02	Gvtong	M8 Hole OT terminal	
Low voltage signal	64334-0100	MOLEX	64319-3211	MOLEX

Connector Pin Definition

AC Input

Position	Description				Picture
1	L1	Line	Rated Current	32A	
2	N	Neutral	Rated Current	32A	
3	PE	Ground	Rated Current	32A	
4	HVIL_IN	Interlock_in	Signal	20mA	
5	HVIL_OUT	Interlock_out	Signal	20mA	

High Voltage Output

Position	Description				Picture
1	HV +	High voltage output positive	Rated Current	22A	
2	HV -	High voltage output negative	Rated Current	22A	
3	HVIL_IN	Interlock_in	Signal	20mA	
4	HVIL_OUT	Interlock_out	Signal	20mA	



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Low-Voltage Output Positive

Position	Description			Picture
/	14V +	Low voltage 14V output positive	Rated Current 180A	

Low Voltage Signal

Position	Description			Picture
1A	NC			
1B	NC			
1C	NC			
1D	NC			
1E	NC			
1F	NC			
1G	NC			
1H	KL30	VCC (12V +)	Power input	
2A	NC			
2B	NC			
2C	NC			
2D	NC			
2E	NC			
2F	NC			
2G	NC			
2H	NC			
3A	NC			
3B	NC			
3C	OBC_Wakeup_IN	OBC hard wire wakeup input, high (KL15) enable	Analog input	
3D	DCDC_Wakeup_IN	DCDC hard wire wakeup input, high (KL15) enable	Analog input	
3E	NC			
3F	NC			
3G	NC			
3H	NC			
4A	CAN-H	CAN high	Digital	
4B	CAN-L	CAN low	Digital	
4C	HVIL_IN	High-voltage interlock_in	Analog output	
4D	HVIL_OUT	High-voltage interlock_out	Analog output	
4E	NC			
4F	NC			
4G	KL 31	Ground (return of 12V)	Power ground	
4H	NC			

Note: The above valid range of medium and high voltage is 6~18VDC.