



# ACU14V3K(H) TECHNICAL INFORMATION

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## LEGAL NOTICE

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## Revisions

Revision	Date	Name	Change
V0.1	22.05.13		Initial

## INDEX

- 1. TECHNICAL DATA 기술자료
  - 1.1 DETAIL SPECIFICATION 상세사양
  - 1.2 CONNECTOR DATA 커넥터 자료
    - 1.2.1 INPUT CONNECTOR 입력 커넥터
    - 1.2.2 OUTPUT CONNECTOR 출력 커넥터
    - 1.2.3 COMM. CONNECTOR 통신 커넥터
  - 1.3 CAN Protocol 통신 프로토콜
    - 1.3.1 NETWORK SPECIFICATION 네트워크 설정
    - 1.3.2 CAN ID DEFINITION CAN ID 정의
- 2. MECHANICAL SPECIFICATION 기구적 사양
  - 2.1 MECHANICAL DIMENSION 기구 형상
  - 2.2 COOLING NIPPLE SPECIFICATION 냉각수 니플 사양

## 1. TECHNICAL DATA 기술자료

### 1.1 DETAIL SPECIFICATION 상세사양

POWER	UNIT	STANDARD	REMARK
Power ratings	[ kW ]	3	
Input side voltage range	[ V ]	600(450~750)	
Input side current ratings	[ A ]	5.6(4.5~7.5)	
Output side Voltage range	[ V ]	14(9~16)	
Output side current ratings	[ A ]	214	
Control Power	[ V ]	12(8~18)	
Structure(Type)	[ - ]	Uni-Directional Phase shift Full Bridge converter	
Efficiency	[ % ]	Over 96	

OPERATING CONDITION	UNIT	STANDARD	REMARK
Location	[ - ]	in Case	
Environ. Temp.(operating)	[ °C ]	-30 ~ 85	
Environ. Temp(storage)	[ °C ]	-40 ~ 105	

MECHANICAL	UNIT	STANDARD	REMARK
Weight	[ kg ]	Under 8	
Size(W*D*H) (mm*mm*mm)	[ - ]	288*229*89	
Vibration class(G)	[ - ]	CE & E-MARK	
Protection Class	[ - ]	IP69K	

COOLING	UNIT	STANDARD	REMARK
Cooling method	[ - ]	Water cooling	
Required water flow rate	[ℓ/min.]	5 ~ 14	
Pressure	[bar]	1 ~ 2	
Coolant Temp range	[ °C ]	45 (30~55)	

CONTROL	UNIT	STANDARD	REMARK
Type of Controller	[ - ]	Digital/Analog	
Command source and type	[ - ]	Voltage command from PCU (via CAN)	
Command recurrence time	[ ms ]	100	
Control period(sampling rate)	[ kHz ]	1	
Control accuracy(steady state)	[ V ]	±0.1V	
Control Bandwidth	[ Hz ]	Over than 1,000	

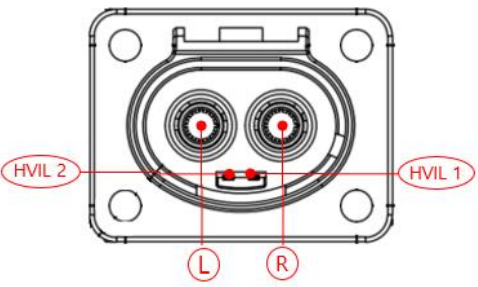
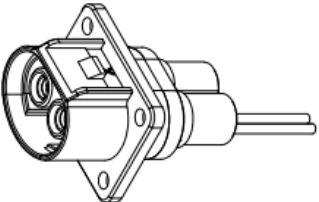
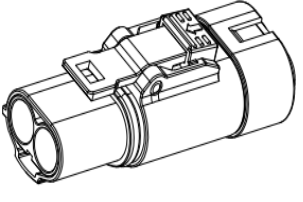
PROTECTION	UNIT	STANDARD	REMARK
Input Under Voltage warning	[ V ]	450~470	
Input Under Voltage fail	[ V ]	Under 450	
Input Under Voltage Recover	[ V ]	Over 470	
Input Over Voltage warning	[ V ]	730~750	
Input Over Voltage fail	[ V ]	Over 750	
Input Over Voltage Recover	[ V ]	Under 730	
Output Under Voltage warning	[ V ]	9~11	
Output Under Voltage fail	[ V ]	Under 9	
Output Under Voltage Recover	[ V ]	Over 11	
Output Over Voltage warning	[ V ]	15~16	
Output Over Voltage fail	[ V ]	Over 16	
Output Over Current	[ A ]	214	
Peak Current	[ A ]	214	
Short Current	[ A ]	250	
Temp Warning	[ °C ]	80~85	
Temp STOP	[ °C ]	85	
Temp Re-start	[ °C ]	Under 75	

## 1.2 CONNECTOR DATA 커넥터 사양

### 1.2.1 High Voltage INPUT CONNECTOR 입력커넥터

Vendor : Amphenol

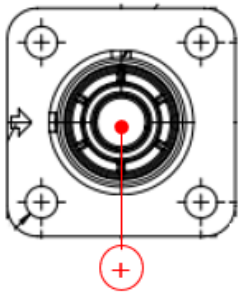
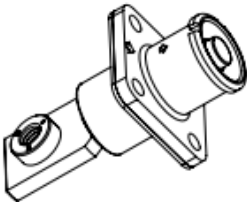
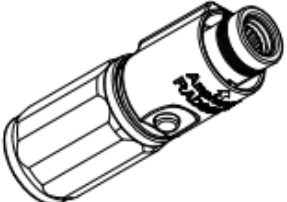
Model No. PL082X-61-6 (Compatible Part no. PL182X-61-6)

Detailed Contents							
			<b>Receptacle(Unit SIDE)</b>		<b>Plug(Wiring SIDE)</b>		
							
<b>Model #</b>		PL082X-61-6					
<b>Manufacturer</b>		Amphenol					
PIN ARRANGEMENT (PART NO.)	Unit SIDE	PL082X-61-6	Pin NO	I/O	Signal Name	Description	Note
	Wiring SIDE	PL182X-61-6	Left	I	HV_DC (-)	High Voltage -	
Pin info	Voltage	1,000VDC	Right	I	HV_DC (+)	High Voltage +	
	Current	60A / HVIL 5A	HVIL 1	I	HVIL 1		Detect Connection
	Wire	6SQ	HVIL 2	I	HVIL 2		

## 1.2.2 Low Voltage OUTPUT CONNECTOR 출력커넥터

Vendor : Amphenol

Model No. C10-763911-0100 (Compatible Part no. C10-731951-010)

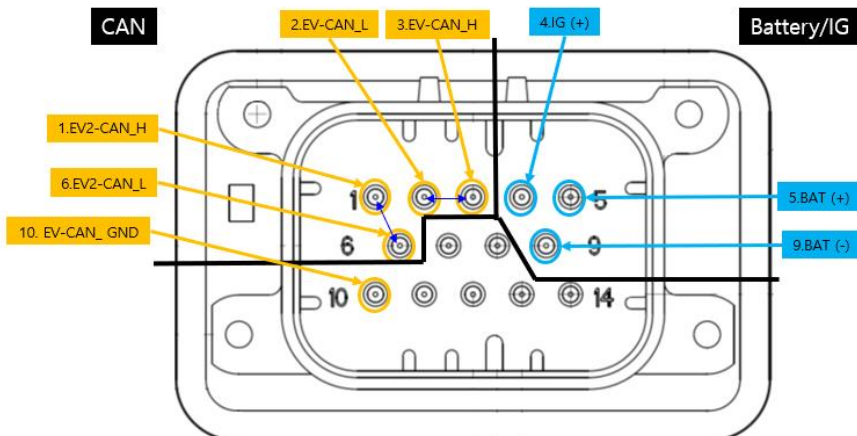
Detailed Contents							
			<b>Receptacle(Unit SIDE)</b> 		<b>Plug(Wiring SIDE)</b> 		
<b>Manufacturer</b>		Amphenol					
<b>PIN ARRANGEMENT (PART NO.)</b>	<b>Unit SIDE</b>	C10-763911-0100					
	<b>Wiring SIDE</b>	C10-731951-010					
<b>Pin info</b>	<b>Voltage</b>	1,000VDC	<b>Pin NO</b>	I/O	<b>Signal Name</b>	<b>Description</b>	<b>Note</b>
	<b>Current</b>	200A	+	O	LV_DC(+)	Low Voltage +	
	<b>Wire</b>	50SQ	-	O	LV_DC(-)	Low Voltage -	Chassis Ground

### 1.2.3 COMMUNICATION CONNECTOR 통신커넥터

Vendor : TYCO AMP

Model No. 1-776262-1 (14Pin) (Compatible Part no 776273-1)

Detailed Contents									
PIN NO.	I/O	Signal Name	Electric Spec		Description	Wiring Path	Note		
			V	A					
1	I/O	EV2-CAN_H	5	0.1	EV2 CAN High (LDC Backup)	-	LDC		
2	I/O	EV-CAN_L	5	0.1	EV CAN Low (LDC Main)	-	LDC		
3	I/O	EV-CAN_H	5	0.1	EV CAN High (LDC Main)	-	LDC		
4	I	IG(+)	12	0.1	IG ON Signal	Vehicle	KEY ON		
5	I	BAT(+)	12	1.2	+12V [VDC]	Battery	BATT ON		
6	I/O	EV2-CAN_L	5	0.1	EV2 CAN Low (LDC Backup)	-	LDC		
7									
Model #		776262-1	8						
Manufacturer		TYCO	9	I	BAT(-)	-	-	12V [Ground]	GND
PIN ARRANGEMENT (PART NO.)	Unit SIDE	776262-1	10	I	CAN-GND	-	-	CAN [Ground]	CAN GND
	Wiring SIDE	776273-1	11						
Pin info	Voltage	< 60V	12						
	Current	< 17A	13						
	Wire	0.5 ~ 1.25SQ	14						





### 1.3 CAN Protocol 통신 프로토콜

#### 1.3.1 Network Specification 네트워크 설정

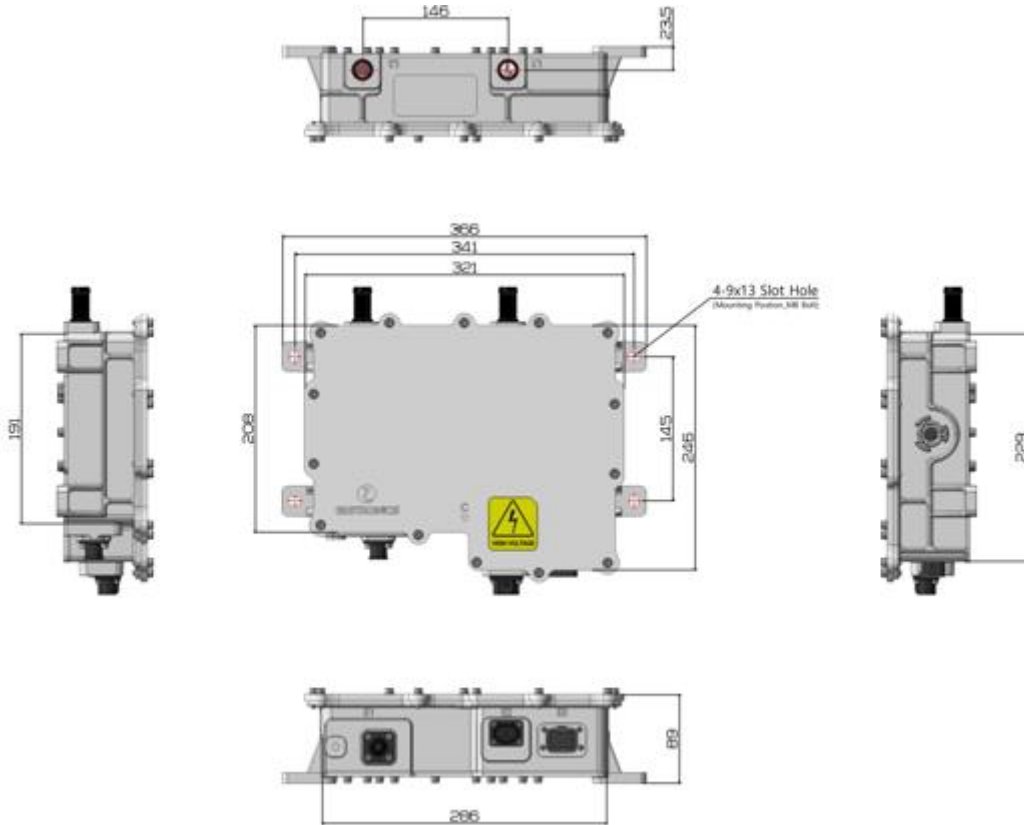
Network Specification		
Layer	Specification	
Physical Layer	Network Type	Bus Type
	Bus Wire Medium	Twisted Pair Wires
	Data Rate	500kbps (2.0B)
	ID type	Extended
	Bit Timing	80%

#### 1.3.2 CAN ID Definition CAN ID 정의

CAN Identifier Definition					
Definition	Cycle Time	CAN ID	Send Type	Sender(ECU)	Receiver(ECU)
DC/DC Convertor Control ID	100	0x18FF31EF	Period	Vehicle Control Unit	DCDC Converter
DC/DC Convertor Status ID	100	0x18FF041A	Period	DCDC Converter	Vehicle Control Unit
DC/DC Convertor Fault ID	100	0x18FF051A	Period	DCDC Converter	Vehicle Control Unit
DC/DC Converter DM1 ID	1000	0x18FECA1A	Cycle	DCDC Converter	Cluster
TPCM	0	0X18ECFF1A	NoMsgSendType	DCDC Converter	Cluster
TPDT	0	0X18EBFF1A	NoMsgSendType	DCDC Converter	Cluster
DCDC UDS Protocol (Send)	0	0X18DAF91A	NoMsgSendType	DCDC Converter	Diagnostic Module
DCDC UDS Protocol (Receive)	0	0X18DA1AF9	NoMsgSendType	Diagnostic Module	DCDC Converter

## 2. MECHANICAL SPECIFICATION 기구적 사양

### 2.1 DIMENSION 기구 치수 및 형상



### 2.2 COOLING NIPPLE SPECIFICATION 냉각수 니플 사양

Vendor : EGTronics

