AD-1500 Series

Programmable Digital Power Supply

Meet PMBus

AD-1500 Series

Programmable Digital Power Supply

Meet PMBus

Agendas

1. AD Series Overview
2. Parallel connection System Diagrams
3. NEW Graphical User Interface (GUI)
4. Features vs. User's Benefits
5. Product Comparison incl. hardware and software (AD vs. AE/AEK & AE/AEK ORing Series)
6. Applications

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AD-1500 Series Overview

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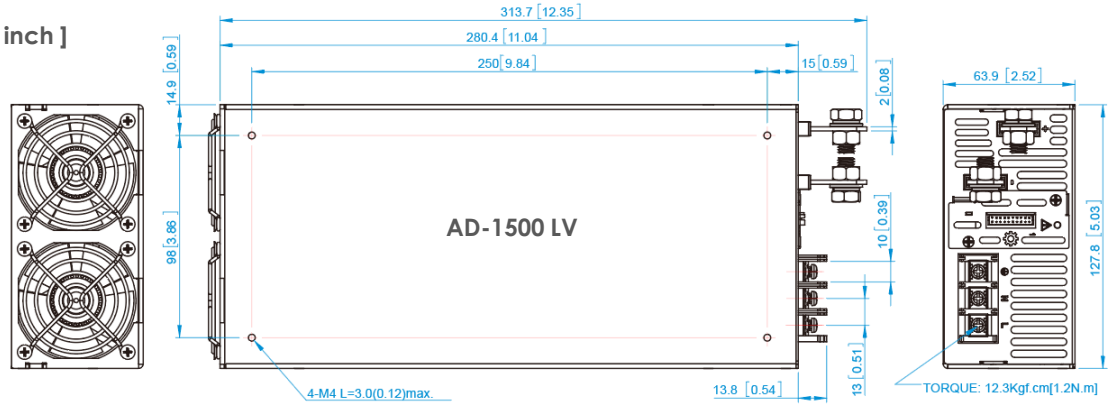
Electrical spec.

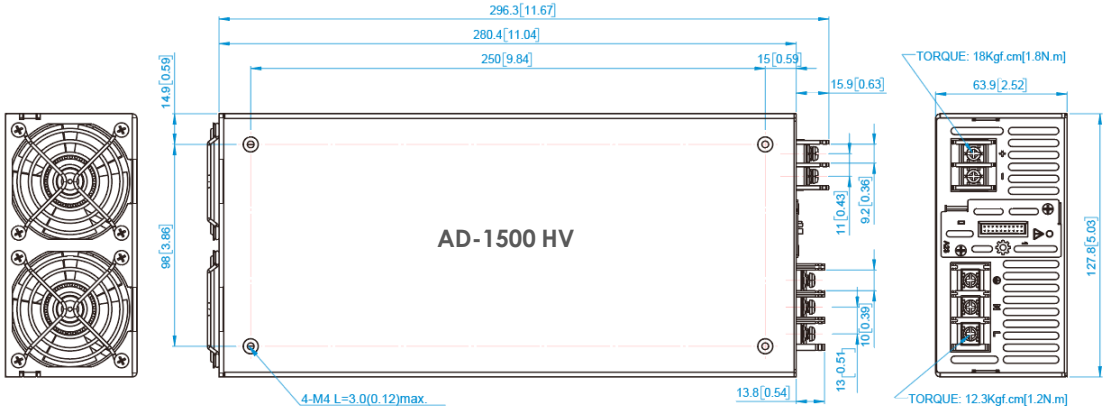
- Output voltage options from 12VDC up to 400VDC
- Wide programmable output voltage and current from 0~105%

	AD-1500-12	AD-1500-15	AD-1500-24	AD-1500-30	AD-1500-36	AD-1500-48	AD-1500-60	AD-1500-120	AD-1500-150	AD-1500-250	AD-1500-400
DC Voltage Rated	12V	15V	24V	30V	36V	48V	60V	120V	150V	250V	400V
Rated Current	125A	100A	62.5A	50A	41.7A	31.3A	26.3A	12.5A	10.0A	6.0A	3.75A
Current Range	0 ~ 125A	0 ~ 100A	0 ~ 62.5A	0 ~ 50A	0 ~ 41.7A	0 ~ 31.3A	0 ~ 26.3A	0 ~ 12.5A	0 ~ 10.0A	0 ~ 6.0A	0 ~ 3.75A
Voltage Range	0 ~ 105% vs. rated							0 ~ 105% vs. rated			
Rated Power	1500W							1500W			

Compact Size

mm [inch]





127.8x64x280.4 mm /

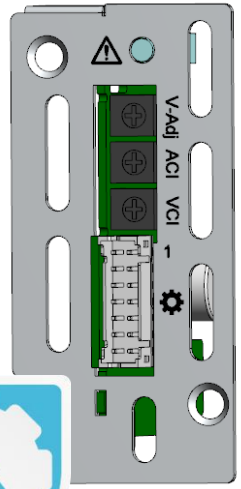
5.03x2.52x11.04 inch

Features highlights

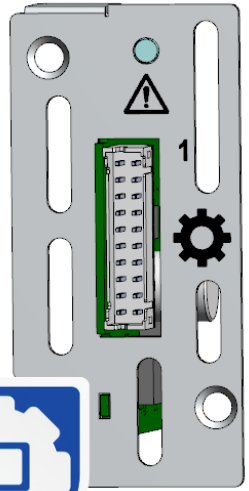
1. Easier Parallel setup & Operation via CANBUS
2. Allow customer to connect different model in Parallel Condition
   (e.g. 4500W= 3KW+1.5KW)
3. Communication Interface : Single / standard / Ethernet
4. Protocol : PMBUS / MODBUS / RS485
5. Built-in EEPRom to memorize the setting after shut down power supply
6. Intelligent GUI to set, monitoring and query powersupply status
7. Built-in ORing-FET

Communication Interface Options

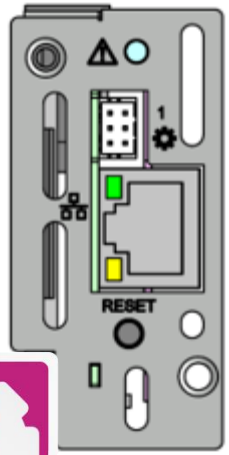
Changeable Interface cards



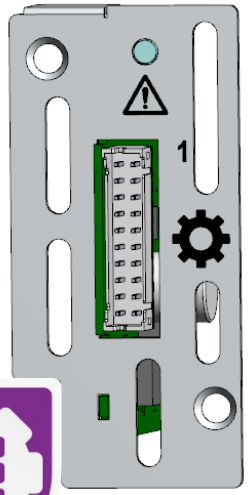
Single Card
C11
(Built-in V-Adj.
and UART)



Standard Card
A23
(Parallel connection)
Cotek STD protocol (RS-485),
and Meet PMBus



Ethernet Card
D11
(Parallel Connection)
ARP, IPv4, UDP, TCP
Device Search Utility (DSU),
DHCP Client, SNMP, ICMP



Standard Card
A24
(Parallel Connection)
MODBUS & Meet PMBUS

ETHERNET

(1) **WEB SERVER** – GUI supporting Web browser to set and monitoring the power supply

(2) **SNMP** (Simple Network Management Protocol) / MODBUS OVER TCP – Telecommunication (SNMP suitable for project user with monitoring software) / Industrial (suitable for project user without monitoring software)

Communication distance of option (2): network communication over a large geographical area, e.g. remote access the power supply in the USA from Taiwan)

Protocol

(1) **A23 :** Cotek STD protocol (RS-485), and Meet PMBus

(2) **A24 :** MODBUS & Meet PMBUS

(3) **C11 :** Cotek STD protocol (RS-485)

(4) **D11 :** ARP, Device Search Utility (DSU), DHCP Client, IPv4,SNMP, TCP, UDP, ICMP

EEPROM

With the built-in **EEPROM**,
it is now possible to set and memorize the parameters (including DC output voltage, current as well as charging settings) after restarting the AC mains.

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Parallel Connection System Diagrams

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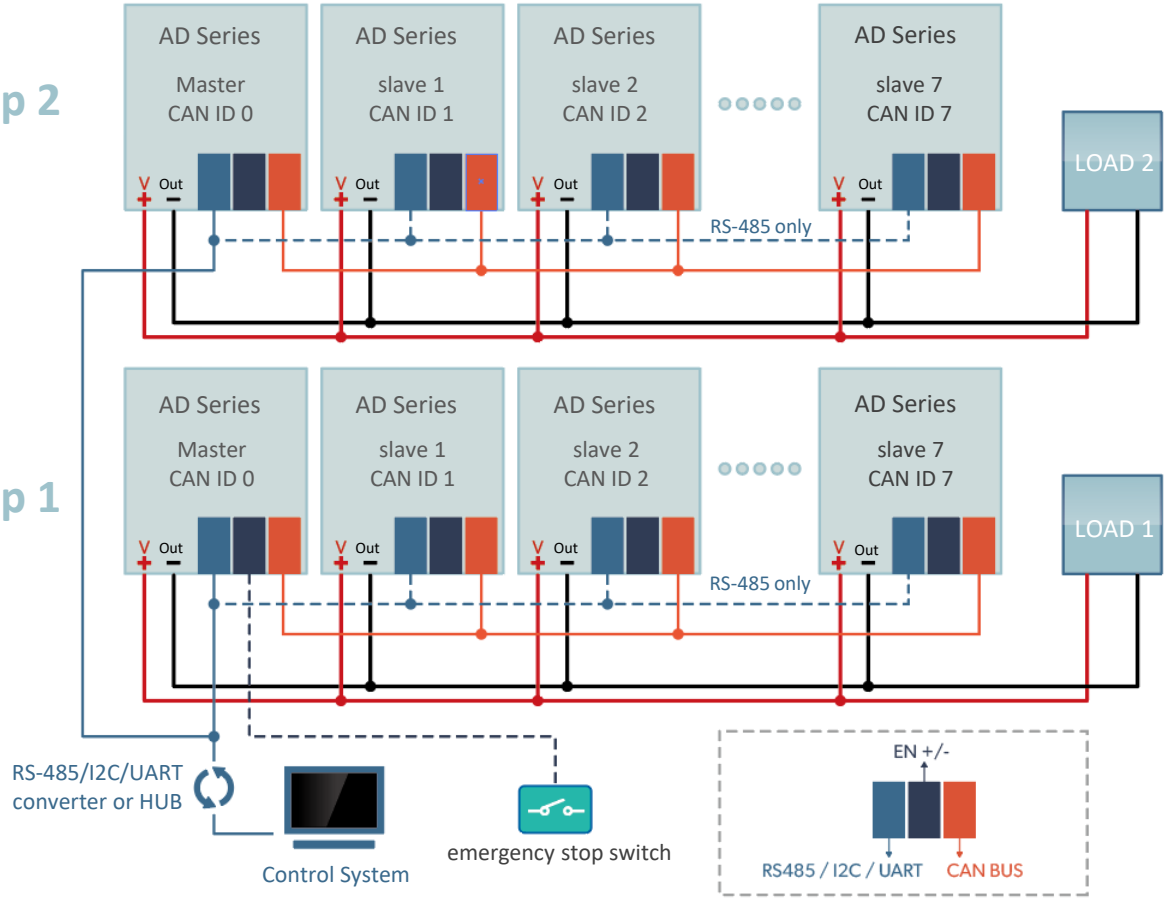
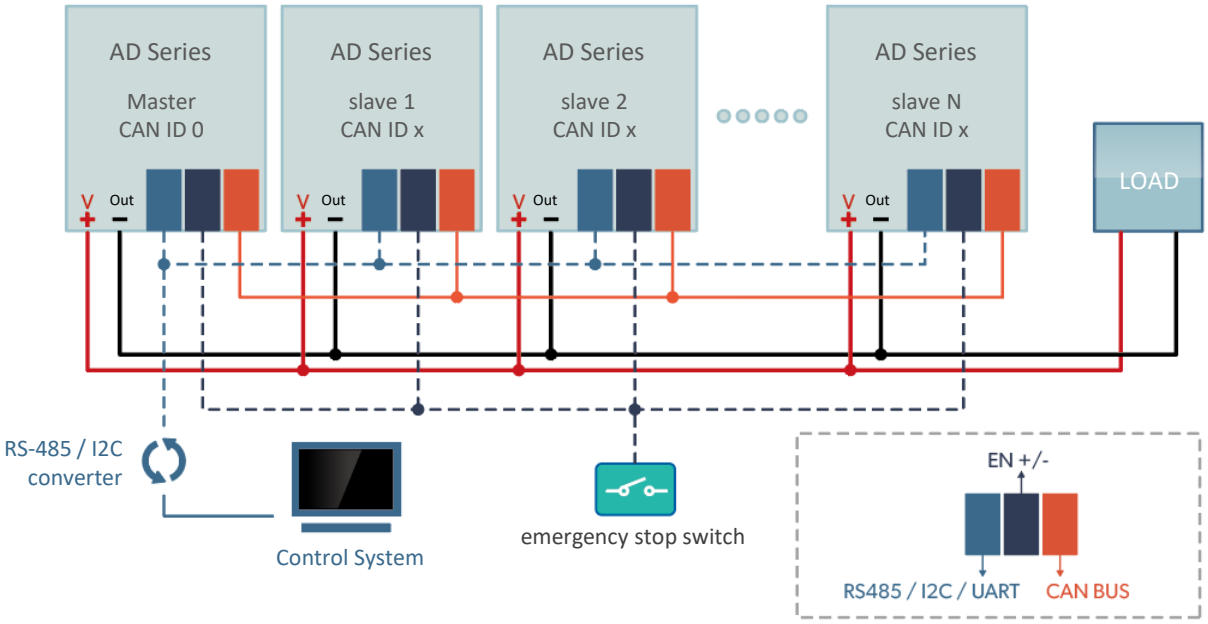


Features:

1. Support connection up to 7 clients + 1 Master
2. Support ID check to monitoring AD on/off state, and the status of the power supplies to ensure current balance



Features:

1. Unlimited connections
2. Does not support ID check but still check the power supplies operate in current balance condition
3. Provide the flexibility for project user to control multiple PSU via their own GUI to perform monitoring and setting

Cotek GUI for Single Unit Control

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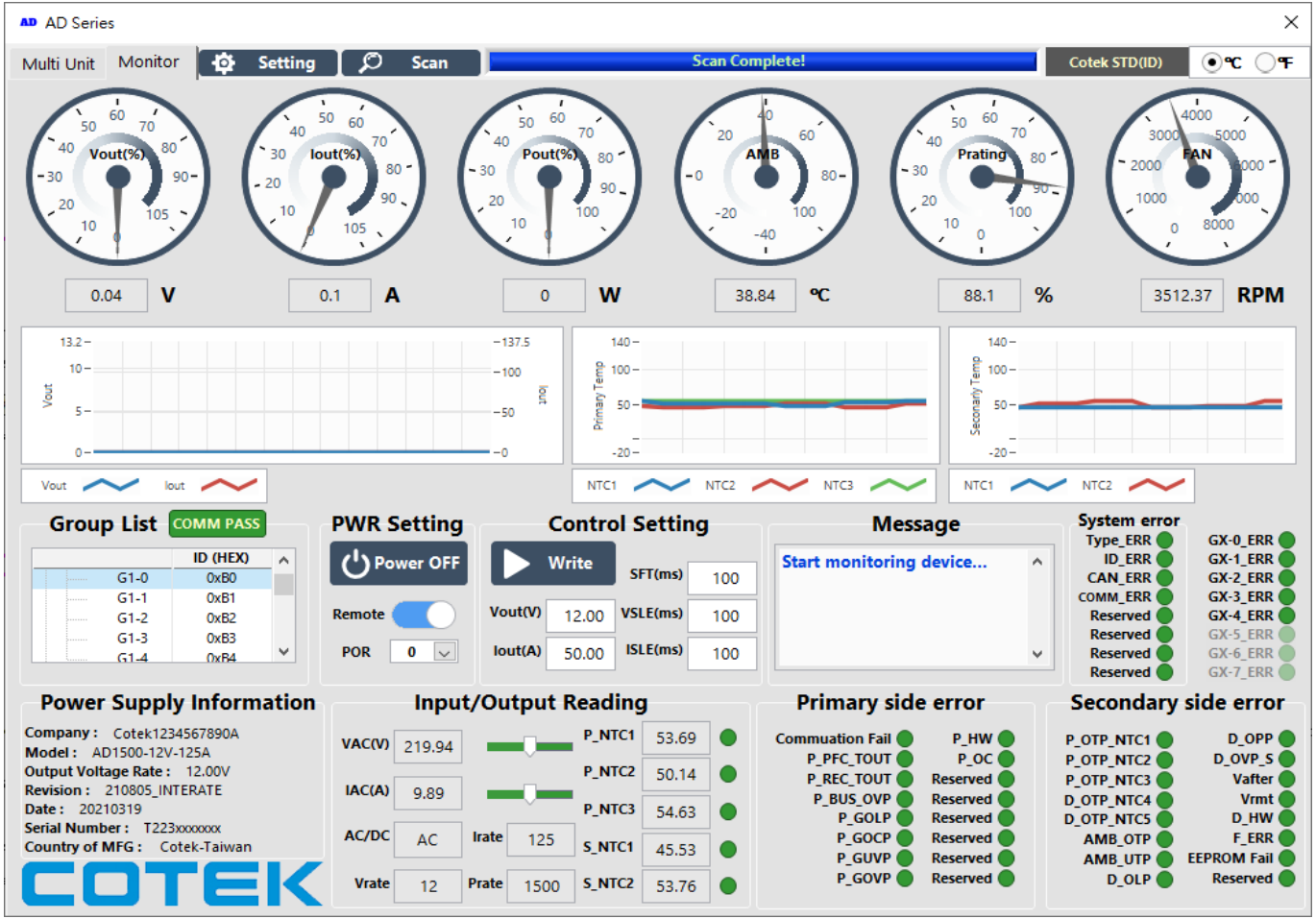
AD Series
Multi Unit
Monitor
Setting
Scan
Scan Complete!
Cotek STD(ID)
℃
℉
Vout(%)
Iout(%)
Pout(%)
AMB
Prating
FAN
0.04
V
0.1
A
0
W
38.84
℃
88.1
%
3512.37
RPM
Vout
Iout
NTC1
NTC2
NTC3
Group List
COMM PASS
ID (HEX)
G1-0 0xB0
G1-1 0xB1
G1-2 0xB2
G1-3 0xB3
G1-4 0xB4
PWR Setting
Power OFF
Remote
POR
0
Control Setting
Write
SFT(ms)
100
Vout(V)
12.00
VSLE(ms)
100
Iout(A)
50.00
ISLE(ms)
100
Message
Start monitoring device...
System error
Type_ERR
ID_ERR
CAN_ERR
COMM_ERR
Reserved
Reserved
Reserved
Reserved
GX-0_ERR
GX-1_ERR
GX-2_ERR
GX-3_ERR
GX-4_ERR
GX-5_ERR
GX-6_ERR
GX-7_ERR
Power Supply Information
Company : Cotek1234567890A
Model : AD1500-12V-125A
Output Voltage Rate : 12.00V
Revision : 210805_INTERATE
Date : 20210319
Serial Number : T223xxxxxxx
Country of MFG : Cotek-Taiwan
COTEK
Input/Output Reading
VAC(V) 219.94
IAC(A) 9.89
AC/DC AC
Vrate 12
Irate 125
Prate 1500
P_NTC1 53.69
P_NTC2 50.14
P_NTC3 54.63
S_NTC1 45.53
S_NTC2 53.76
Primary side error
Commuation Fail
P_PFC_TOUT
P_REC_TOUT
P_BUS_OVP
P_GOLP
P_GOCP
P_GUVP
P_GOVP
P_HW
P_OC
Reserved
Reserved
Reserved
Reserved
Reserved
Reserved
Secondary side error
P_OTP_NTC1
P_OTP_NTC2
P_OTP_NTC3
D_OTP_NTC4
D_OTP_NTC5
AMB_OTP
AMB_UTP
D_OLP
D_OPP
D_OVP_S
Vafter
Vrmt
D_HW
F_ERR
EEPROM Fail
Reserved

Cotek GUI to Control Multiple Units or Parallel Connection (Groups)


AD Series
Multi Unit
Monitor
Setting
Scan
Scan Complete!
Cotek STD(ID)
℃
℉
Group 0
AD1500-12V-125A
OFF
SV SI RV RI RP State
12.00V 50.00A 0.02V 0.0A 0.00W
Group 1
AD1500-12V-125A
OFF
SV SI RV RI RP State
12.00V 50.00A 0.06V 0.3A 0.02W
Group 2
AD1500-12V-125A
OFF
SV SI RV RI RP State
12.00V 50.00A 0.05V 0.5A 0.03W
Group 3
AD1500-12V-125A
OFF
SV SI RV RI RP State
12.00V 50.00A 0.04V 0.0A 0.00W
Group 4
AD1500-12V-125A
V1.0.0.23


AD Series
Multi Unit
Monitor
Setting
Scan
Scan Complete!
Cotek STD(ID)
℃
℉
Group 0
AD1500-12V-125A
OFF
SV SI RV RI RP State
12.00V 50.00A 0.06V 0.0A 0.00W
Group 1
AD1500-12V-125A
OFF
SV SI RV RI RP State
12.00V 50.00A 0.05V 0.3A 0.01W
Group 2
AD1500-12V-125A
ON
SV SI RV RI RP State
12.00V 50.00A 12.05V 399.6A 4815.18W
Group 3
AD1500-12V-125A
ON
SV SI RV RI RP State
12.00V 50.00A 12.13V 50.3A 610.14W
Group 4
AD1500-12V-125A
V1.0.0.23


AD Series
Multi Unit
Monitor
Setting
Scan
Scan Complete!
Cotek STD(ID)
℃
℉
Group 1
AD1500-12V-125A
OFF
SV
SI
RV
RI
RP
State
12.00V
50.00A
0.04V
0.4A
0.02W
SV
12.00
SI
50.00
Write
485 ID
CAN ID
RVA
RI
RP
SN
State
Master 0xB0 0 0.04V 0.1A 0.00W T223xxxxxxx
Slave 0xB1 1 0.05V 0.1A 0.01W T223xxxxx31
Slave 0xB2 2 0.05V 0.1A 0.01W T223xxxxx32
Slave 0xB3 3 0.05V 0.1A 0.01W T223xxxxx33
Slave 0xB4 4 0.05V 0.1A 0.01W T223xxxxx34
Group 2
AD1500-12V-125A
ON
SV
SI
RV
RI
RP
State
12.00V
50.00A
11.96V
400.4A
4788.78W
V1.0.0.23

Cotek GUI for Ethernet Connection

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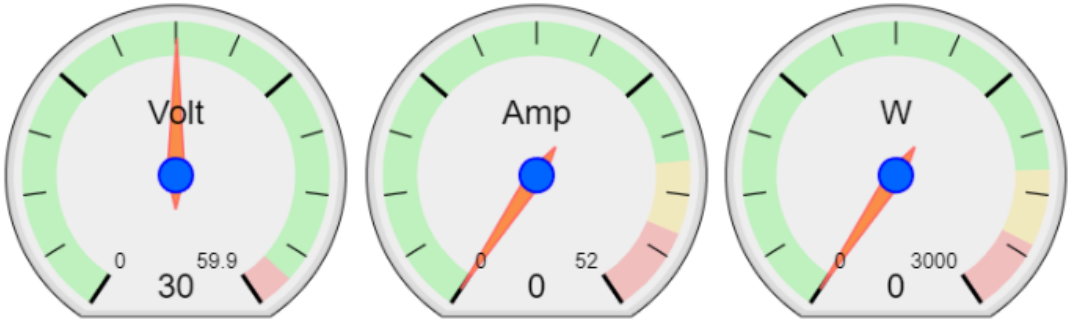
- Status
- System Control
- Power Config
- Network Config
- SNMP Config

AD series



Alarm Status

Master	Output Voltage	Output Current	Output Power	Ambient Temperature	Fan Speed	Status
	29.99 V	0.00 A	0 W	25.46	1015	
SLAVE1	Output Voltage	Output Current	Output Power	Status		
	29.92 V	0.00 A	0 W			

COTEK

- Status
- System Control
- Power Config
- Network Config
- SNMP Config

System Control

Power Switch: Power Off

ACTIVE

COTEK ELECTRONIC IND. CO., LTD | No. 33, Sec. 2, Renhe Rd., Daxi Dist., Taoyuan City 33548, Taiwan
Tel: +886 3-3891999 | Fax: +886 3-3802333

COTEK

- Status
- System Control
- Power Config
- Network Config
- SNMP Config

Power Config

Output Voltage:	30.00	V
Output Current:	5.00	A
R/L Mode:	1	
P_ON Mode:	0	
P_OK Mode:	1	
Contype:	1	
Id:	0	
MODBUS Id:	160	
PMBUS Id:	80	
SFT :	100	
VSLE:	10	
ISLE:	10	
VRSL:	10	
M/S Mode:	1	
CANID Mode:	1	
Password:	0000	

Save Config

COTEK

- Status
- System Control
- Power Config
- Network Config
- SNMP Config

Network Config

This page allows the configuration of the board's network settings.

CAUTION: Incorrect settings may cause the board to lose network connectivity.

Enter the new settings for the board below:

MAC Address:	04:91:62:CD:04:85
Host Name:	AD-1500 REMOTE
	☐ Enable DHCP
IP Address:	192.168.100.250
Gateway:	192.168.100.254
Subnet Mask:	255.255.252.0
Port Number:	160

Save & Reset

COTEK

- Status
- System Control
- Power Config
- Network Config
- SNMP Config

SNMP Community Configuration

Read/Write Community String configuration for SNMPv2c Agent.

Configure multiple community names if you want the SNMP agent to respond to the NMS/SNMP manager with different read and write community names.

Read Comm1 :	public
Read Comm2 :	read
Write Comm1:	private
Write Comm2:	write

Save Config

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Features vs. user's benefits

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User's Benefit

Features	User Benefit
Universal AC Input with Active PFC (90-264Vac)	World-wide usage
DC Output range from 12VDC up to 400VDC	Wider Application
Global Control to power on/off and set DC output voltage and current	Labor and cost saving
Programmable output voltage & current (0~105%)	Flexible in voltage and current setting
Constant Current limit	Suitable for Battery Charging
Auxiliary Output	Reduce overall cost when 5V power is required

User's Benefit

Features	User Benefit
CANBUS	Easy parallel connection installation
Front-end design (Input & Output at the same time)	Labor and cost saving during installation
Built-in ORing FETS	To better protect power supply
Intelligent GUI	To set, query and monitoring the power supply state
Safety Approvals / UL, CB, TUV, UKCA and CE	Worry-free design-in

COTEK

Product Comparison

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Hardware

Item	Spec	AE/AEK Series	AE/AEK ORing Series	AD Series
1	Auxiliary	5V/0.5A or 9V/0.3A	5V/0.5A or 9V/0.3A	5V/1A with isolation
2	Aux Power protection	N/A	N/A	OVP & OCP with isolation
3	Communication port with isolation circuit	N/A	Yes	Yes (except single)
4	Changeable Interface cards	N/A	N/A	Yes
5	P.OK signal	High/Low signal	High/Low signal	Isolation
6	Parallel connection with different power rating	N/A	N/A	Yes
7	Built-in ORing	N/A	Yes	Yes
8	CANBUS Port (For parallel connection only)	N/A (via PAR Pins)	N/A (via PAR Pins)	Yes

Software

Item	Spec	AE/AEK Series	AE/AEK ORing Series	AD Series
1	Programmable O/P Voltage & Current	0-105%	0-105%	0-105%
2	Charger mode to do 3 stage charging setting	N/A (Optional CT-211 available)	N/A (Optional CT-211 available)	Coming soon
3	Programmable mode for customer to do output voltage & current setting with timescale	N/A	N/A	Coming soon
4	EEPROM Fail alert	N/A	N/A	Yes
5	EEPROM to save & memorize settings	N/A (Optional CT-211 available)	N/A (Optional CT-211 available)	Yes

Software

Item	Spec	AE/AEK Series	AE/AEK ORing Series	AD Series
6	Abnormal fan detection	Failure detection	Failure detection	Load / Lock / Open
7	PMBus	N/A	N/A	Yes (version 1.2)
8	MODBUS	N/A	N/A	Yes
9	ETHERNET	N/A	N/A	Yes (WEB SERVER/SNMP/CLIENT)

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Applications

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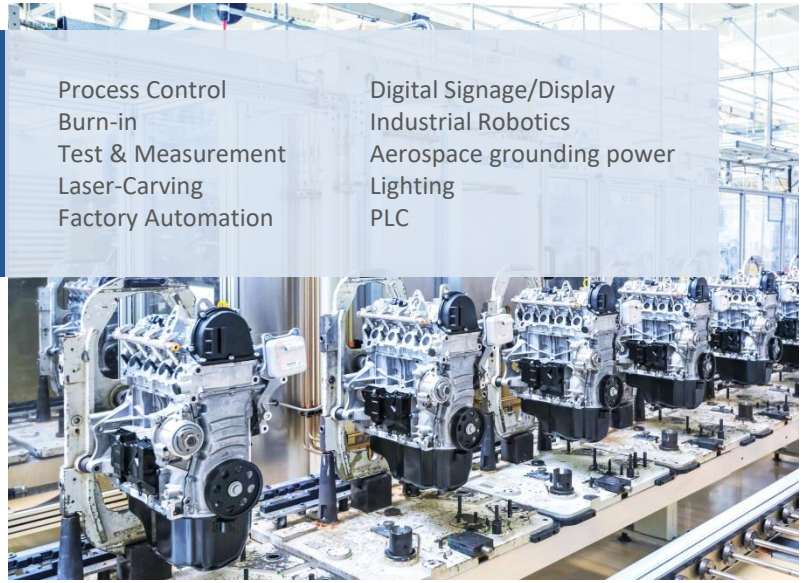
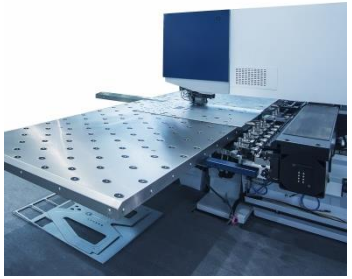
Applications I

Industrial

Process Control
Burn-in
Test & Measurement
Laser-Carving
Factory Automation

Digital Signage/Display
Industrial Robotics
Aerospace grounding power
Lighting
PLC





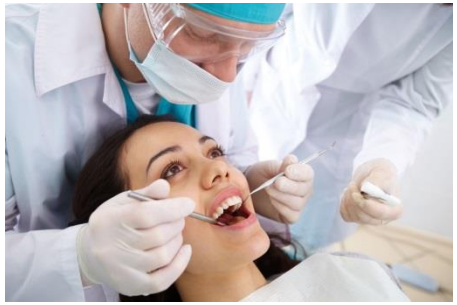
Why Cotek:

- Universal Input
- Wide programmable range
- PCBA conformal coating as default

Applications II

Blood Analysis
Dental heating
Laboratory
Monitoring
Cytocentrifuge
Incubators

Healthcare



Why Cotek:

- Universal Input
- Wide programmable range
- PMBUS communication
- Temperature info read out

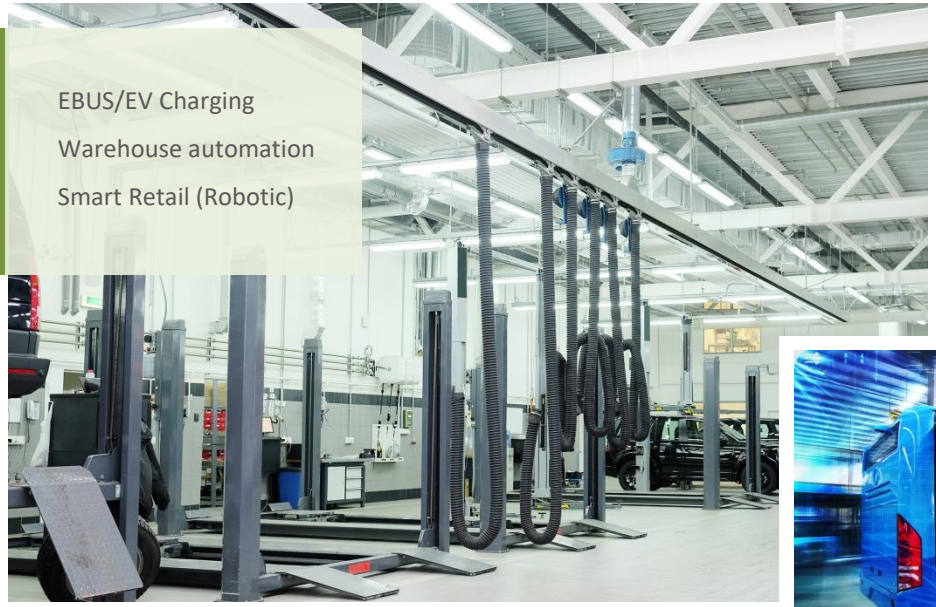
Applications III

Charging

EBUS/EV Charging

Warehouse automation

Smart Retail (Robotic)



Why Cotek:

- Constant current limit
- Wide programmable range
- Remote communication & setting
- Parallel Connection

Applications IV

Water

Water treatment

Waterpool

Cathodic Protection

Why Cotek:

- Wide programmable range
- Remote setting & communication

Applications V

Ethernet

Potential Applications

- Industrial automation
- Gas and Oil Refineries
- Pipelines
- Simulators
- Air Traffic Control
- Financial Services
- Satellite Communications - Ground System
- Mission Critical Application
- CCTV

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