IP SYSTEMES
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ES Box

Edge Server

Multi-function edge server box

Connecting the IIoT ecosystem

Providing cloud solutions for edge devices

HMI in Hand

Mobile device APP for equipment control

No extra cost

Free, Secure and Real-time

Enabling multi-user connections to one equipment

Screens for equipment and mobile devices can be designed differently

Realizing production equipment mobile access control with simple settings

HMI in Hand

Input compatibility on large screens

Delivering information safely

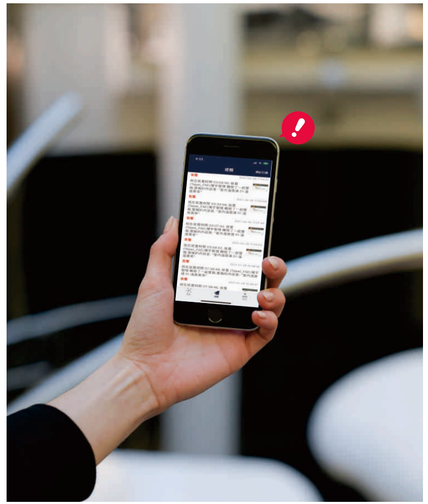
Monitoring the real-time data of the production

Allowing Intranet connections to save wiring cost

Environmental monitoring and operator access control

Displaying the real-time production efficiency with graphics

IDCS Client



Real-time alarm broadcasting APP

Real-time alarm messaging

Historical alarm record tracking

Advanced alarm information design

Device registry by scanning QR Code

Smart Factory

PANELVISION

War Room equipment monitoring

Intuitive technology software solution

Secure connection with very little data consumption

Allowing up to 25 screens displaying simultaneously

Displaying multi-screens and single enlarged screen monitoring

tMananger

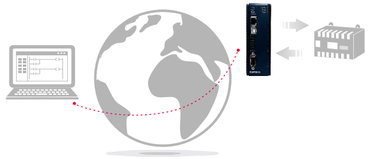
Remote maintenance management with a powerful gateway service

Efficient updating applications without extra wirings

Reducing in person equipment maintenance frequency

Data exchanging between Serial and Ethernet communications and between different protocols

Realizing remote maintenance by allowing download and upload PLC applications for the edge equipment



PANELEXPRESS V4.0

Designed for Convenience

Collecting data to integrate with IT system

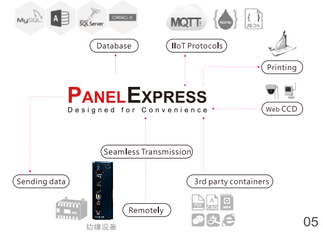
Connecting MySQL, Access, Oracle database

Sending data to the edge equipment remotely

Supporting web CCD, smart camera and printing

Providing IIoT MQTT, RESTful and JSON protocols

Compatible with 3rd party containers; ie explore, Wechat, CAD, PDF, MP4



Unlimited, Opportunities.

Exterior material

Made from industrial use of high quality plastic; tough, durable, excellent electrical insulation with high temperature resistance at -30~70°C range.

Product Design

ES Box is of a durable simplistic design that is robust product and reliable.

LED Design

Dual LED display and 178 degree viewing angle lets you monitor the status easily.

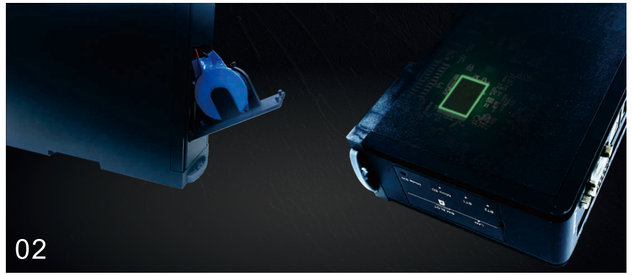
01 S I/O (Safety signal contactor) for secure remote protection

Built-in signal contact alarm.
Turning the edge devices on and off through IDCS remotely.
Monitoring the remote device status real-time.

01

02 Battery backed 128 KB memory with battery expansion design

The battery backed 128 KB memory prevents data lost from power surge. When the battery is low, the system will send out SMS for users to be aware of the situation. The users can then add a battery on the expandable battery socket to maintain power.



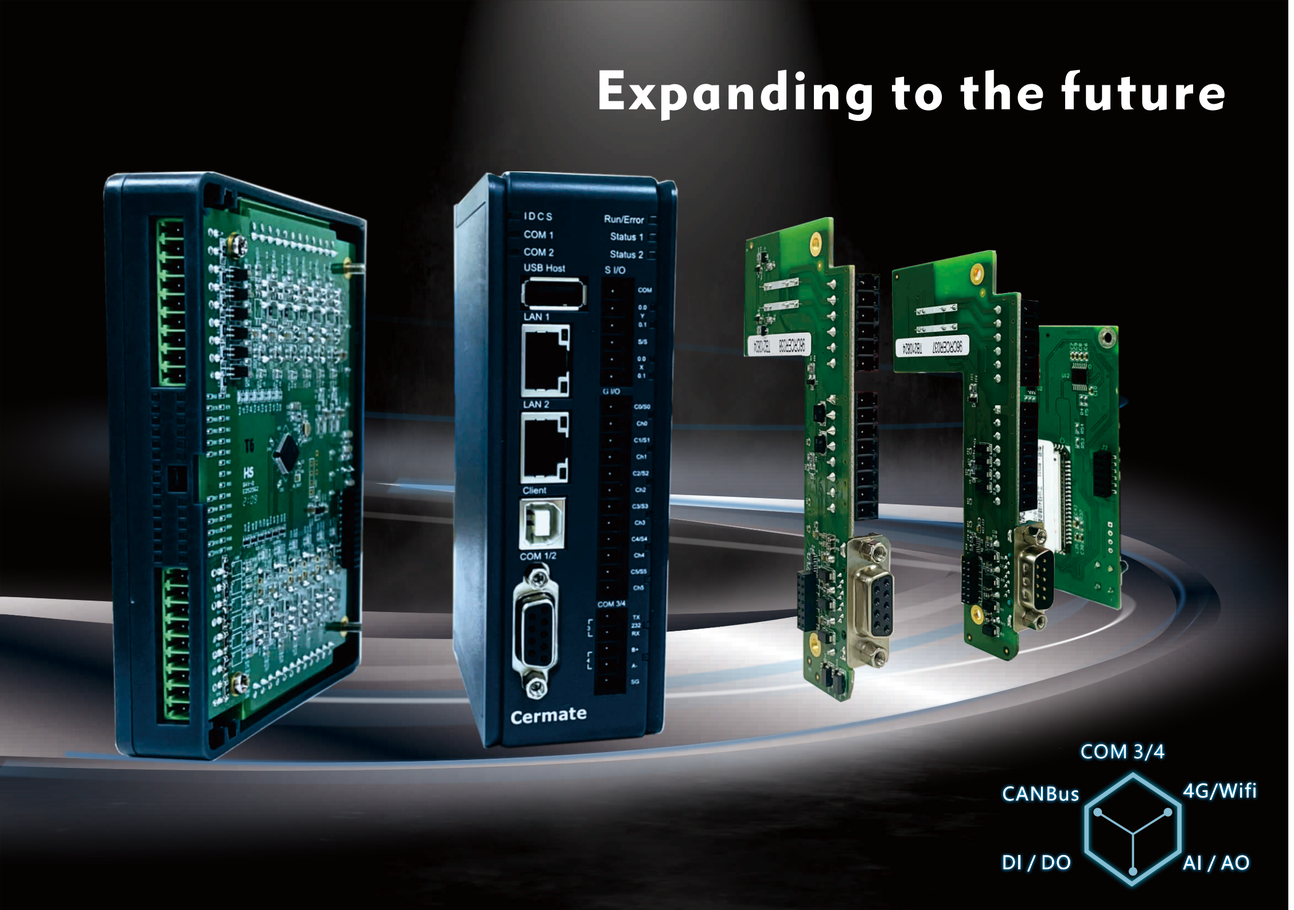
02

03 Multi-function expandable interface to answer your needs

There are single port and dual-port Ethernet models to choose from. The dual Ethernet port model provides switches or two individual IPs that exchange data between different networks. Besides that, there are micro SD, 4G/Wifi、DI/DO、AI/AO、CAN Bus、Serial Port to satisfy your requirements.

03

Expanding to the future



01

02

01 Din-Rail mounting clip

Built-in Din-rail mounting clips for 35mm aluminum din-rail mounting tracks makes the installing or removal quick and easy.

02 Magnet mount

Quick access and installation with built-in strong invisible magnet for attaching to any metal plates no less than 0.5mm of thickness. This design especially works well for no vibration applications.

03 Screw-fixed mount

There are two screw holes that are flexible for mounting on different material surfaces.

03

Basic Model



Model Name	ES20	ES21	ES22
Working Memory (128MB)	○	○	○
Backup FRAM	0KB	128KB	128KB
Serial Port	COM1:RS-232/422/485 COM2:RS-232/422/485	COM1:RS-232/422/485 COM2:RS-485(RS-232 Optional)	COM1:RS-232/422/485 COM2:RS-485(RS-232 Optional)
Ethernet	1*RJ45	2*RJ45 (Switch)	2*RJ45 (Dual IP)
USB 2.0(Host)	---	○	○
USB 2.0(Client)	○	○	○
RTC	Network Time Protocol(NTP)	○	○
Micro SD	Optional	○	○
A Side Expansion(Optional)	○	○	○
Supply Voltage	Isolated 24Vdc ±10%		Isolated 12~36Vdc ±10%
Operating Temperature	-20° C ~ 70° C		
Relative Humidity	10% ~ 90%		
Shock (Operation)	Half sine, 15G, 11ms duration		
Vibration (Operation)	Random vibration 1 Grms (5~500 Hz)		
FCC / CE	YES / IEC61000-6-2 & IEC61000-6-4		
Software Version	PM Designer v4.0.5.31 or higher version		
Weight(g)	234.8	239.8	247.8

A SIDE EXPANSION


D-Sub(Male)

D-Sub(Female)




Model Name	A01	A02	A03	A05	A11	A12	A13
COM3	RS-232/422/485	RS-232/422/485	RS-485(Isolated)	RS-485(Isolated)	RS-232	RS-232	RS-232
COM4	RS-232	RS-232	RS-232(Isolated)	RS-485(Isolated)	RS-485	RS-485	RS-485
CAN Bus	---	---	Yes(TB8: Pin6/7)	Yes(TB8: Pin6/7)	---	---	---
SIO(Safety signal contactor)	Yes(2DI/2DO)	Yes(2DI/2DO)	Yes(2DI/2DO)	Yes(2DI/2DO)	Yes(2DI/2DO)	---	---
GIO(I/O Port)	---	---	---	---	Yes(3-In/3-Out)	Yes(5DI/1AI)	Yes(6DI/2DO/2AI)
Wi-Fi	---	---	---	---	Yes(Built-In)	---	---
4G / Wi-Fi	Optional	Optional	Optional	Optional	---	---	---
B Side Expansion	Optional	Optional	Optional	Optional	---	---	---
Weight(g)	271.8	271.8	265.8	265.8	303.8	291.8	303.8

B SIDE EXPANSION

Model Name	Channel	I/O Type	Electrical Specifications	Address	Remark
Analog Input	CH0	Voltage Input	0.0~10.0Vdc	AI0	Analog input value range : 32-bit floating point
	CH1	Voltage Input		AI1	
	CH2	Voltage Input		AI2	
	CH3	Current Input	0.0~20.0mA	AI3	
	CH4	Current Input		AI4	
	CH5	Current Input		AI5	
Digital Input	CH6	Digital Input	24Vdc/5mA	I1.0	Digital input response frequency: 5KHz
	CH7	Digital Input		I1.1	
	CH8	Digital Input		I1.2	
	CH9	Digital Input		I1.3	
	CH10	Digital Input		I1.4	
	CH11	Digital Input		I1.5	
Digital Output	CH12	Digital Output	Relay: AC250V/DC30V The most resistant to high current 2A BJT(NPN/PNP): DC24V/0.7A	Q1.0	Pulse output : 5KHz
	CH13	Digital Output		Q1.1	
	CH14	Digital Output		Q1.2	
	CH15	Digital Output		Q1.3	
	CH16	Digital Output		Q1.4	
	CH17	Digital Output		Q1.5	
Analog Output	CH18	Voltage Output	0.0~10Vdc	AO0	Digital output response frequency: 0~4095
	CH19	Voltage Output		AO1	
	CH20	Voltage Output		AO2	
	CH21	Current Output	0.0~20mA	AO3	
	CH22	Current Output		AO4	
	CH23	Current Output		AO5	

STANDARD & A SIDE EXPANSION Naming Rule

ES20 - 1S N A01 - C 1 R 0
ES22 - 2H 0 A03 EM - C 1 M 1

Primary Naming
ES20 Single Ethernet Port
ES21 Dual Ethernet Ports with/Single IP
ES22 Dual Ethernet Ports with/Cross-Domain IP

Outlook & Interface
0S Open Frame Standard (N.A - Micro SD)
1S Standard (N.A - Micro SD & B Side Expansion)
2S Standard & A/B Side Expansion (N.A - Micro SD)
0H Open Frame - Full Function
1H Full Function (N.A - B Side Expansion)
2H Full Function & A/B Side Expansion
0D/1D DTU(Data Transfer Unit)
0G/1G Gateway

4G/Wi-Fi
N No RU100(4G/WiFi)
W WiFi Only(A21 Module)
0 4G China
1 4G AU/NZ/LATAN/TW
2 4G EU/ME/AF/KR/TH/SEA
3 4G NA

A Side Expansion
A00 None
A01 SIO2x2/TB8 & DB9 Male(COM3/COM4)
A02 SIO2x2/TB8 & DB9 Female(COM3/COM4)
A03 SIO2x2/TB8(COM3/COM4 Isolated/CAN Bus)
A04 SIO2x2/R8 Female(COM3/COM4)
A05 SIO2x2/TB8(COM3/COM4=RS485 Isolated/CAN Bus)
A12 SIO(5DI/1AI)/TB5(COM3/COM4)
A13 SIO(6DI/6DO/2AI)/TB5(COM3/COM4)
***A11/12/13 Not applicable to 2H and built-in 4G/Wi-Fi module products

B Side Expansion
-- Not Marked
EM The interface is reserved, and customers can expand by themselves.
01 6DI/6DO(R)/4VI/2TI/3VO/3AO
03 DI x20 / Relay Out x4
.....others

Housing
C Standard Plastic (-10°C~60°C)
F Industrial Plastic(-30°C ~70°C)
V Metal (Outdoor -40°C ~80°C)

NAND Flash
1 128MB+Standard Mainboard
3 128MB+Enhanced Mainboard

COM2 / Fixed
Q COM2:RS-485 / Standard Fixed
R COM2:RS-232 / Standard Fixed
M COM2:RS-485 / Magnetic Fixed
N COM2:RS-232 / Magnetic Fixed

FRAM(Backup Memory)
0 0KB (ES20 Default)
1 128KB (ES21/22 Default)
5 512KB

B SIDE EXPANSION Naming Rule

Bxx - XXXXXXXXXX - C 01

B Side Module
Bxx M0 MCU I/O
Pxx M4 MCU PLC

There are 10 codes in the middle, add the codes in the order below, and the Substitute codes will be used if the codes are exceeded.

DI	Type
I	NPN/PNP

AI	Type
A	AI
V	VI

DO	Type
R	Relay
Q	BJT(PNP)
N	BJT(NPN)
P	Photo Coupler

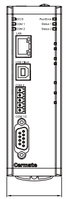
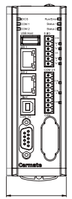
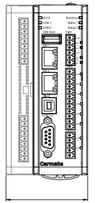
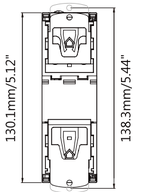
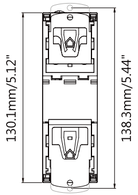
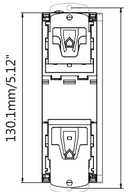
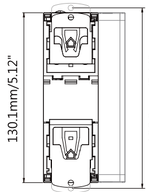
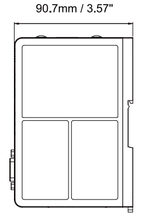
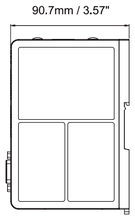
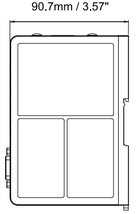
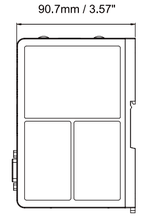
AO	Type
C	AO
U	VO

Standard:B01-I6R6A3V3C3U3-P01 → B01-D66A33Q33-P01
Example:B99-I2A1V2Q3RC3U4-F02 → B99-I212Q3R34-F01

PCB Version
01 V1.0
02 V2.0

Housing Color
P Light blue(Default)
A~Z Same color as the host product

Dimension

Standard	A side expansion	Reserve B side expansion cover	B side expansion
			
41.9mm/1.65"	41.9mm/1.65"	45.9mm/1.81"	62.5mm/2.46"
			
130.1mm/5.12" 138.3mm/5.44"	130.1mm/5.12" 138.3mm/5.44"	130.1mm/5.12" 138.3mm/5.44"	130.1mm/5.12" 138.3mm/5.44"
			
90.7mm / 3.57"	90.7mm / 3.57"	90.7mm / 3.57"	90.7mm / 3.57"