



Delight Through Connections



**iO-GRID**  
**REMOTE I/O**

Intelligent manufacturing | Key product for digital transformation



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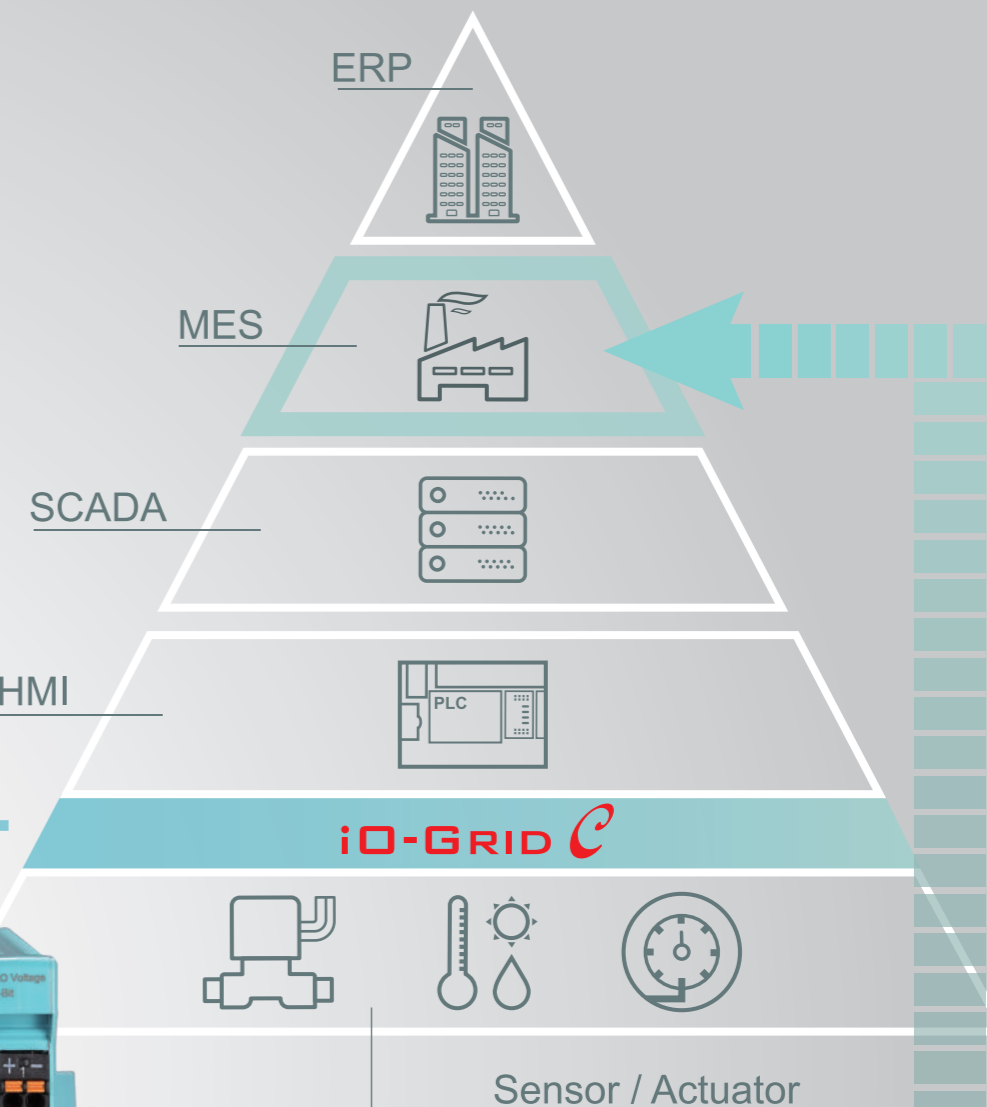


YouTube

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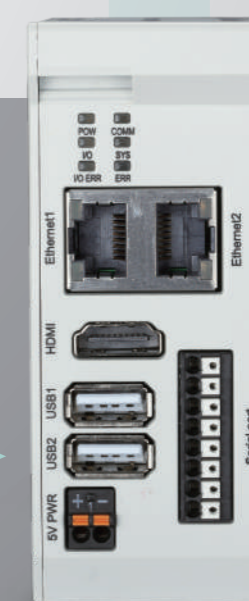
The perfect bridge  
between the control layer  
and field equipment



## Application Field

- General machinery
- Wood processing
- Plastic machinery
- Packing machinery
- Molding technique, steel plate processing
- Window and door processing machinery
- CNC machine
- Tire and rubber industry
- Printing and paper machine
- Cable and pipeline industry
- Textile industry
- Precision instrument
- Transportation and logistics technology
- Carrying and assembly technology
- Building automation
- Smart city
- Wind power generation
- Solar energy
- Energy industry
- CPU
- Biotechnology
- Food industry
- Automobile industry
- Semiconductor manufacturing
- Biomedical engineering
- Intelligent agriculture

Efficient assistant for the collection and analysis of industrial production data



Edge computing



## About Us

Through many years of experience in industrial automation and the integration of smart factory digitalization, DAUDIN has developed the **iO-GRID** fieldbus product with strong functions and price competitiveness on the market, to provide the best solution for the digital transformation of factories with the digital machine communication system of DAUDIN.

The fieldbus communication products include common industrial communication protocols such as **Modbus**, **EtherCAT**, **PROFINET**, **EtherNet/IP** and **CC-Link IE Field**. The digital, analog and temperature remote I/O module series can connect to the PLCs and industrial controllers of global brands via simple settings.

Among the digital transformation solutions for smart factories, the digital machine communication system of DAUDIN mainly pairs with edge computing and smart electronic signage software. By integrating the **iO-GRID** product, equipment information of the factory can be collected for data organization and analysis. It also can rapidly constitute an independently-operating digital management system without the need to additionally install expensive ERP or MES modules.

For the objectives and core values of DAUDIN, in addition to improving the data collection function of automatic systems and reducing costs, even more important is to assist small and medium manufacturing businesses in conducting fast and easy digital transformations without any burdens.

DAUDIN provides comprehensive solutions for the customer to complete the objectives of digitalization, visualization and intelligentization step by step, thereby rapidly making a first entry into smart manufacturing.

Together Forever!



## Core Values

01



Developing new products for industrial automation

02



Providing the optimal solution in the industry

03



Listening to the opinion of the customer to meet the market needs

04



Continuing to upgrade product functions and services

Together Forever

## Products and Services

Small and medium manufacturing businesses - Digital transformation solutions for industry



Smart electronic signage systems

### Smart electronic signage systems with independent operation

By using a mobile device or computer and connecting the browser to the data host, you can quickly browse charts of the situation room, field signage information and output Excel reports.



Data collection, computing and analysis

### Edge computing

By supporting various information and data exchange technologies, edge computing can be used as an intelligent gateway for the industrial protocol of the OT layer and network communication of the IT layer, to find the best automatic platform for realizing informatization.



Field information collection

### Core **iO-GRID** series for the digital transformation of factories

Adopting stable OT technology as its basis, **iO-GRID** is compatible with common industrial protocols to provide information on the IT system production site. There is no need for the additional installation of an ERP/MES system or the replacement of equipment. The product can effectively collect the data of the motor rotation speed, flow meter, temperature and humidity, various types of meters, analog and digital sensors.



Coupler Module

P.14



GF2-C001T  
Modbus



GF2-C002T  
EtherCAT



GF2-C003T  
EtherNet/IP



GF2-C004T  
PROFINET

Power Supply Module

P.19



GFPS-0202



GFPS-0303

Edge Computing

P.21



GFPC-0303

Digital Module

P.15



GF2-DI01T



GF2-DI02T



GF2-DQ01T



GF2-DQ02T

Analog Module

P.17



GF2-AI01T



GF2-AI02T



GF2-AQ01T



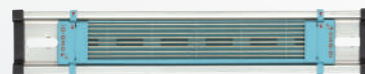
GF2-AQ02T

Accessories

Bus board P.22

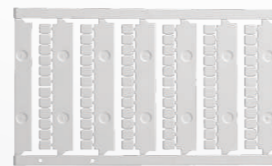


BS-0X0DRC



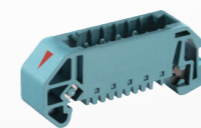
BS-7XXDRC

Marker P.23



TM42W

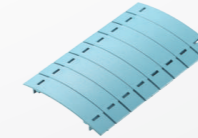
Bus board accessories P.24



Adapter socket  
BS-210D



Adapter Plug  
BS-213D



Dust cover  
BS-C028D

Wiring tool P.25



Flathead  
screwdriver



Phillips  
screwdriver



Dinkle Plier

Most Compatible & Highly Flexible **iO-GRID C Series**



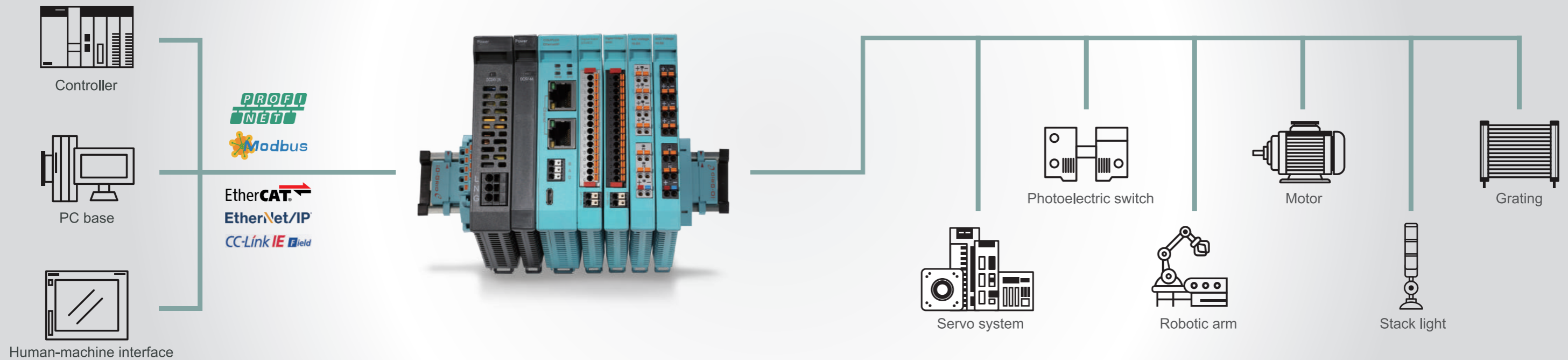
## Product Introduction

### Comprehensive **iO-GRID C Series**

Compatible with various industrial communication interfaces and has excellent performance

The **CC-Link IE Field**, **EtherNet/IP**, **EtherCAT**, **PROFINET**, **Modbus** and **iO-GRID C** series are equipped with diversified a high-speed industrial network communication interface to connect with the master controller via the high-speed industrial communication interface. Equipped with Dinkle's latest push-in design (PID), the S-cage clamping structure is integrated with a high tensile strength stainless still clip within the terminal block holds the wire securely and resists equipment vibration, ensuring long-term connection stability and reducing installation and maintenance costs. Through the dedicated backboard design, hot swapping function is enabled to allow the machine to be suspended without disconnecting the power, which is more convenient for installation and maintenance.

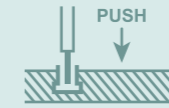
## Product Application



# Product Features



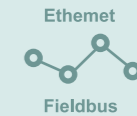
Slim Size



Push-in Design



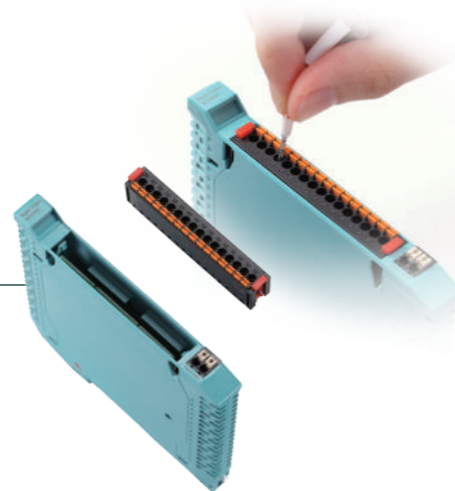
LED Indicator



Ethernet  
Fieldbus  
Diverse Communication Support

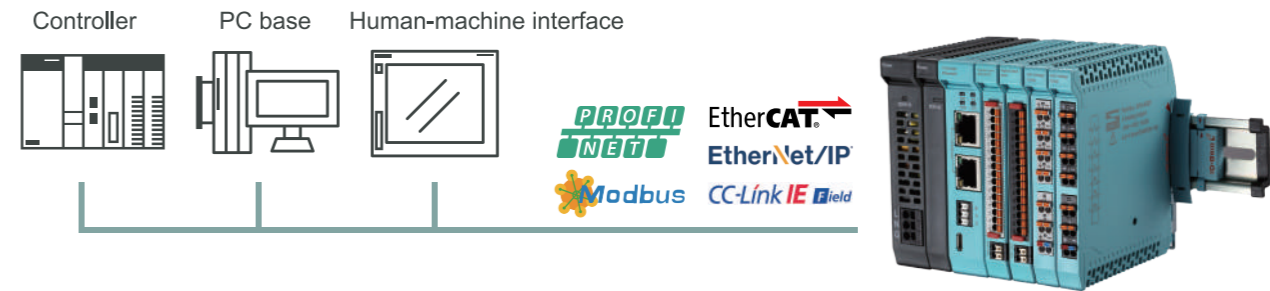
## Removable push-in terminal block

With the latest Push-In Design (PID), the terminal block allows a tool-free installation for solid wires or wires with ferrule, ensuring a quicker and more reliable wiring process. Wiring can be easily connected by simply plugging in the wire to actuate the patented S-cage clamp. DAUDIN also provides various wire-saving and adapter terminal modules, averagely saving 70% wiring time and 60% wiring materials.



## Diversified high-speed fieldbus

Easily achieve a distributed control system through the exclusive **iD-GRID** software for simple setting and fast connections. Supports the industrial network communication interfaces commonly used in the industry today. It is highly compatible with PLCs and industrial controllers of global brands, allowing for flexible planning and application by users.



## LED display design with extreme transmittance

Light guide materials with high transmittance are used to make the light source more focused for more saturated and clear colors and lights. LEDs are placed next to high-density terminal block channels for users to more intuitively determine the current operation status.

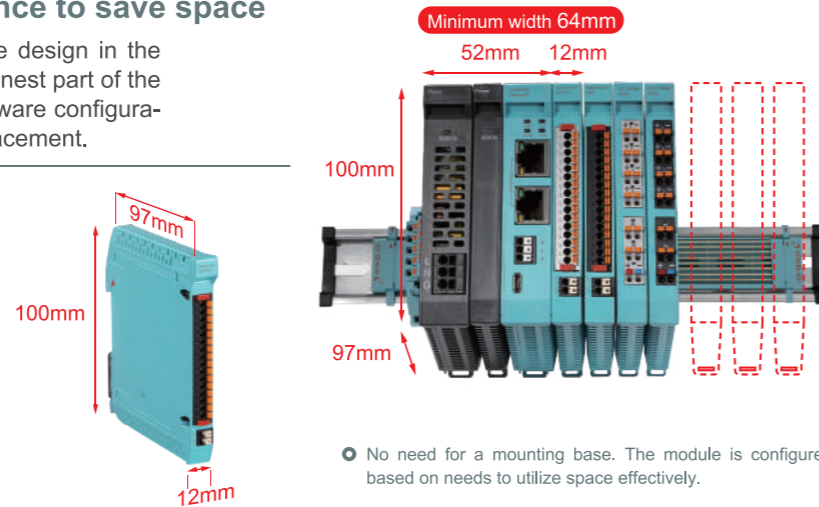


## Most flexible I/O extension function

Providing diversified economical remote I/O modules to satisfy all kinds of automatic system applications and development costs: power modules, digital modules and analog I/O modules, high-speed counting modules and temperature modules. The remote I/O modules at each station can be easily extended to more than 500 points with various network topology extensions via the coupler module. The high capacity I/O and strong extension function is applicable to various types of factory automation, process automation and distribution systems.

## Design with a fine appearance to save space

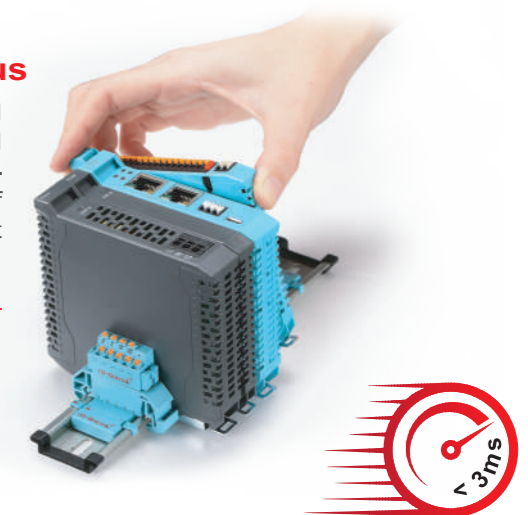
This is the most exquisite appearance design in the industry, with merely 12mm for the thinnest part of the module to enhance the quality of hardware configuration for the user and save space for placement.



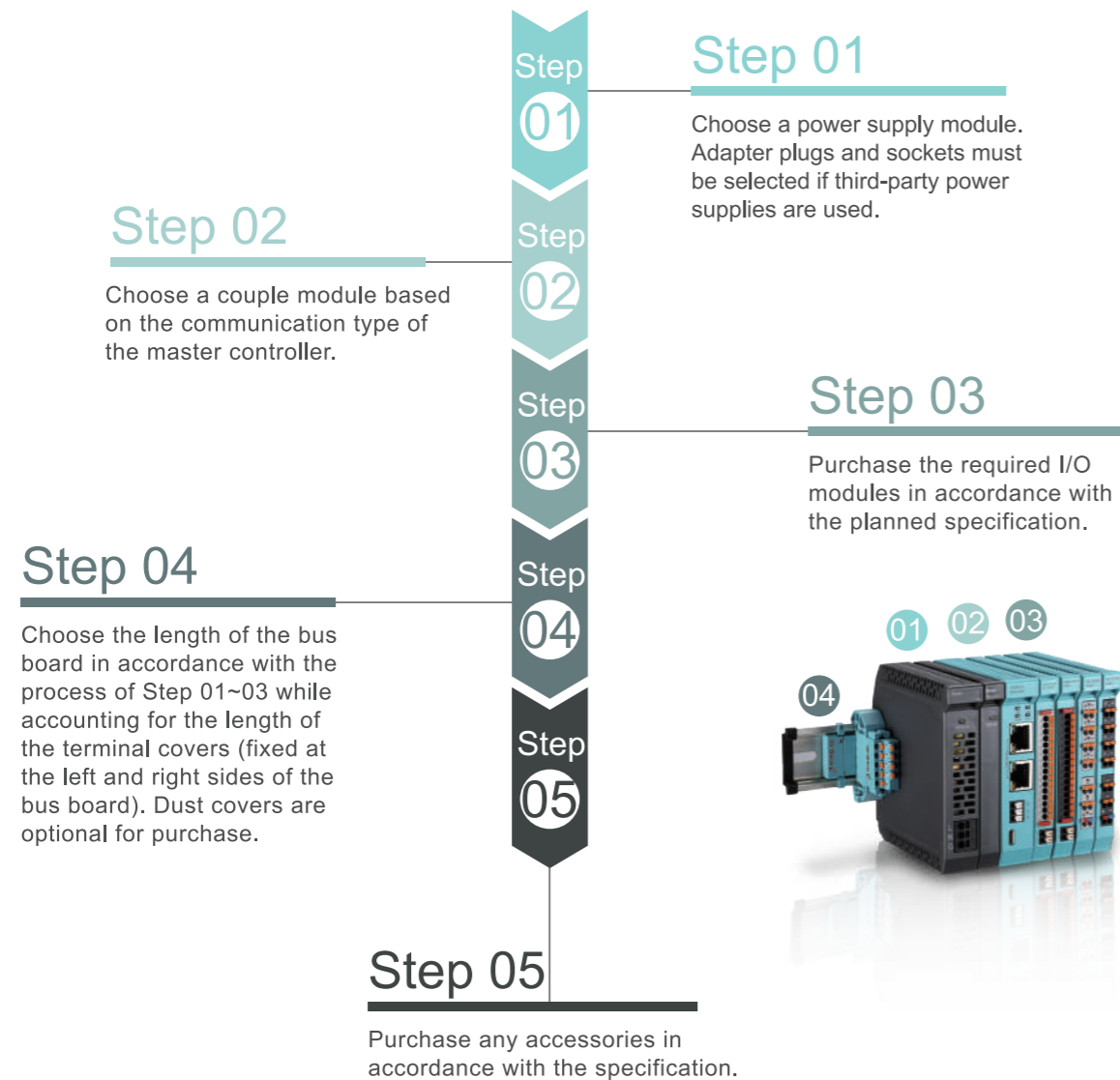
No need for a mounting base. The module is configured based on needs to utilize space effectively.

## Exclusive high-speed communication bus

The exclusive high-speed communication bus is designed to significantly increase the communication speed and quality and has a system reaction time of <math>< 3ms</math>. The modules can be freely installed on the bus track. In case of module replacement, you only have to remove those that need replacing without having to use the traditional method of moving each module.



## Product Selection Process



Power distribution module



GFPB-0102



Marker



TM42W

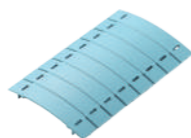
Bus board accessories



Adapter socket  
BS-210D



Adapter Plug  
BS-213D



Dust cover  
BS-C028D



Flathead  
screwdriver



Phillips  
screwdriver



Dinkle Plier

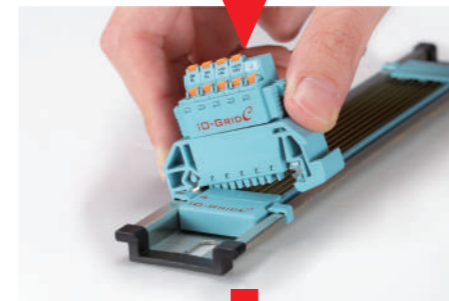
## Product Installation and Setup

After confirming the components required for installation, prepare to enter the installation steps. Please follow one principle during installation: the red arrow indicator must be upward and must be inserted into the bus board from the top down for installation.



### Step 01

First, install the bus board with the red arrow upward by inserting it onto the TS-35 standard DIN Rail from the top down.



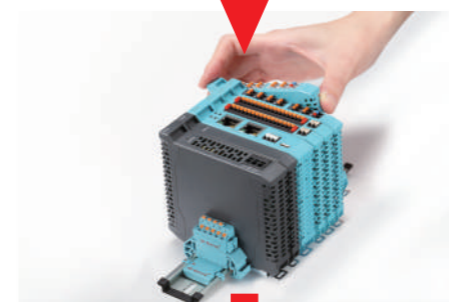
### Step 02

Next, install the adapter module. The adapter plug is inserted into the adapter socket with the red arrow upward. It is inserted onto the leftmost track of the bus board from the top down.



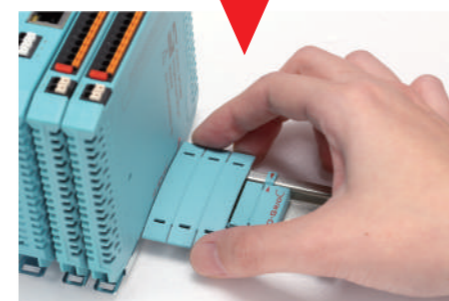
### Step 03

Then install the power module. It is inserted onto the DIN Rail from the top down with the red arrow upward.



### Step 04

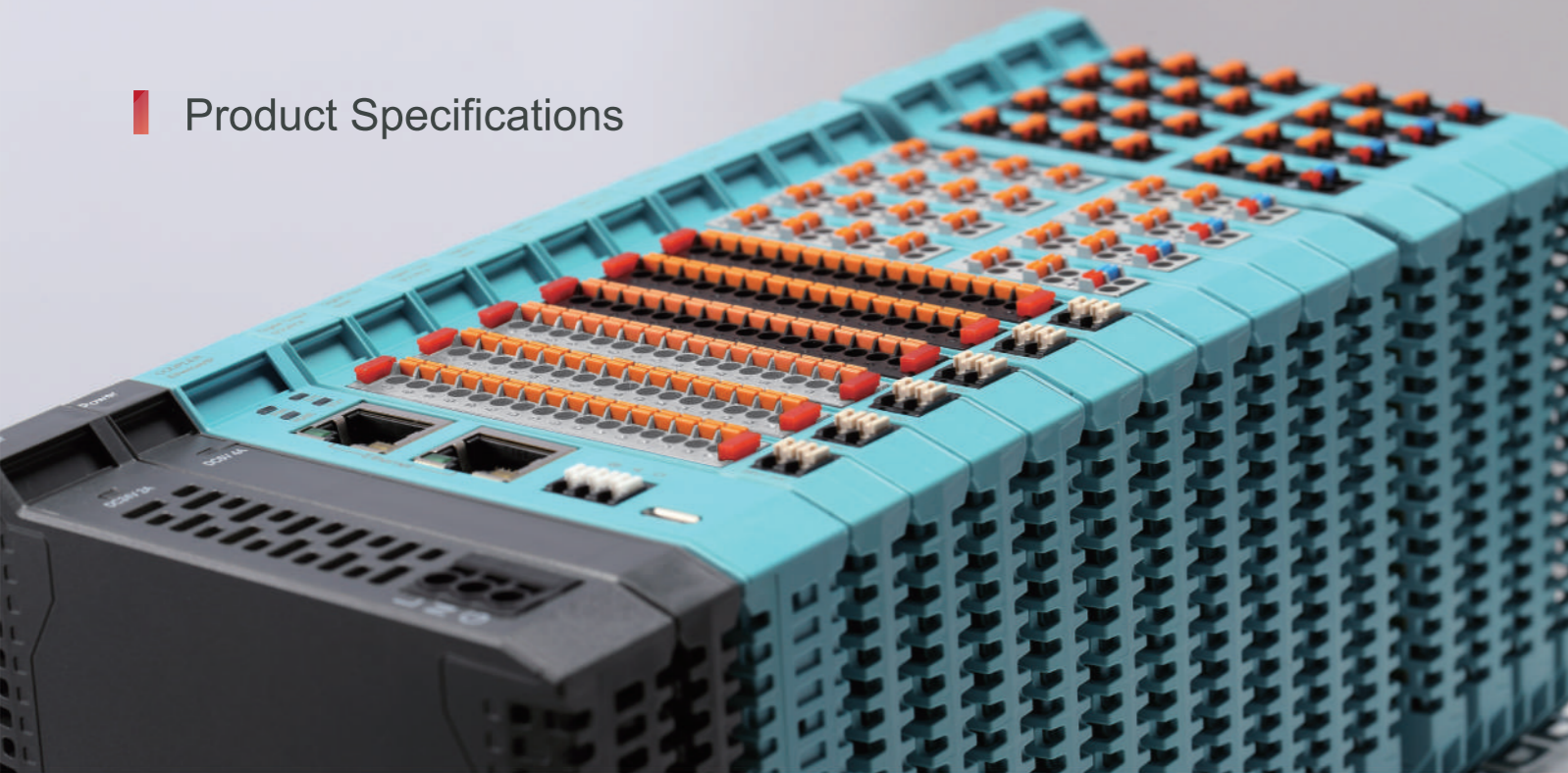
Repeat the above steps for the subsequent installation of the gateway module, control module, digital input and output modules.


























### Step 05

After installing all components, select a dust cover with the proper length to cover the extra space of the bus board. The dust cover can be directly attached without any direction restriction.

## Product Specifications



## iO-GRID C Series

	<b>GF2-C001T</b>	 Modbus Coupler Module
	<b>GF2-C002T</b>	 EtherCAT Coupler Module
	<b>GF2-C003T</b>	 EtherNet/IP Coupler Module
	<b>GF2-C004T</b>	 PROFINET Coupler Module
	<b>GF2-D I 01T</b>	Digital Input Module: 16 channels Sink
	<b>GF2-D I 02T</b>	Digital Input Module: 16 channels Source
	<b>GF2-DQ01T</b>	Digital Output Module: 16 channels Sink
	<b>GF2-DQ02T</b>	Digital Output Module: 16 channels Source
	<b>GF2-A I 01T</b>	Analog Input Module: 4 channels/16-bit resolution/Voltage
	<b>GF2-A I 02T</b>	Analog Input Module: 4 channels/16-bit resolution/Current
	<b>GF2-AQ01T</b>	Analog Output Module: 4 channels/16-bit resolution/Voltage
	<b>GF2-AQ02T</b>	Analog Output Module: 4 channels/16-bit resolution/Current
	<b>GFPS-0202/0303</b>	Power Supply Module
	<b>GFPC-0303</b>	Edge Computing
	<b>BS-0X0DRC/BS-7XXDRC</b>	Bus Board
	<b>GFPB-0102</b>	Power Distribution Module
	<b>BS-210D/BS-213D</b>	Adapter Socket/Adapter Plug
	<b>TM42W/BS-C028D</b>	Marker/Dust Cover
	<b>DNT11/DNT13 series</b>	Wiring Tool

## Coupler Module



Product Picture



Product Model	GF2-C001T	GF2-C002T	GF2-C003T	GF2-C004T
<b>Communication Specifications</b>				
Communication Protocol	Modbus TCP	EtherCAT	EtherNet/IP	PROFINET
Communication Interface	RJ-45			
Interface Port Number	2			
Transmission speed	10/100 Mbps	100 Mbps	10/100 Mbps	10/100 Mbps
<b>Technical Specifications</b>				
Module Type	Communication Module			
Max. Expansion Module	30 slots			
Max. Input Data Length	252 bytes	256 bytes	252 bytes	252 bytes
Max. Output Data Length	252 bytes	256 bytes	252 bytes	252 bytes
Voltage Supply(System)	24 VDC via DINKLE Bus			
Current Consumption(System)	Max. 100 mA	Max. 110 mA	Max. 100 mA	Max. 100 mA
Isolation Method	Photocoupler Isolation			
Indicator	Power Status:Green			
	System Status:Green/Red			
	Alarm Status:Green/Red			
	Communication Status:Green/Red			
<b>General Specifications</b>				
Dimensions (W*D*H)	20 x 100 x 97mm			
Weight	80g	78g	80g	80g
Operating Temperature	0 ... +60 °C			
Storage Temperature	-25 ... +85 °C			
Permissible Humidity (Non-condensing)	RH 95%			
Altitude Limit	< 2000 m			
Ingress Protection (IP)	IP 20			
Pollution Severity	II			
Product Certification	CE			
Wire Range	0.2mm <sup>2</sup> ~1.5mm <sup>2</sup> (AWG 28~16)			
Suggested Terminals	DN00510D / DN00710D			





## Digital Input Module

Product Picture		
Product Model	GF2-DI01T	GF2-DI02T
<b>Technical Specifications</b>		
Number of Input Channels	16	
Voltage Supply(Field)	24 VDC (-15%~+20%)	
Current Consumption(Field)	Max. 49mA@24 VDC	Max. 51mA@24 VDC
Voltage Supply(System)	24 VDC via DINKLE Bus	
Current Consumption(System)	Max. 24mA@24 VDC	
Input Current per Channel for Signal	2.4mA	
Input Type	Sink	Source
Communication Interface	via DINKLE Bus	
Indicator	16 Green Input States	
Isolation Method	Photocoupler Isolation	
Protective Circuit	Overvoltage Protection	
Connection Method	Push-in	
Input Voltage range for signal (0)	15 VDC...30 VDC	0 VDC...10 VDC
Input Voltage Range for Signal (1)	0 VDC...10 VDC	15 VDC...30 VDC
Input Filter Time	3 ms	
Common Type	16 Points / External Common	
<b>General Specifications</b>		
Dimensions (W*D*H)	12 x 100 x 97mm	
Weight	62g	
Operating Temperature	0...+60 °C	
Storage Temperature	-25...+85 °C	
Permissible Humidity (Non-condensing)	RH 95%	
Altitude Limit	< 2000M	
Ingress Protection (IP)	IP20	
Pollution Severity	II	
Product Certification	CE	
Wire Range	0.2mm <sup>2</sup> ~1.5mm <sup>2</sup> (AWG 28~16)	
Suggested Terminals	DN00510D / DN00710D	



## Digital Output Module

Product Picture		
Product Model	GF2-DQ01T	GF2-DQ02T
<b>Technical Specifications</b>		
Number of Output Channels	16	
Voltage Supply(Field)	24 VDC (-15%~+20%)	
Current Consumption(Field)	Max. 42mA@24 VDC	Max. 37mA@24 VDC
Voltage Supply(System)	24 VDC via DINKLE Bus	
Current Consumption(System)	Max. 40mA@24 VDC	Max. 38mA@24 VDC
Max. Output Current per Channel for Signal	0.5A	
Load Type	Ohmic load, lamp load	
Output Type	Sink	Source
Communication Interface	via DINKLE Bus	
Indicator	16 Green Output States	
Protective Circuit	Overcurrent protection / Overvoltage protection	
Connection Method	Push-in	
Common Type	16 Points / External Common	
<b>General Specifications</b>		
Dimensions (W*D*H)	12 x 100 x 97mm	
Weight	65g	
Operating Temperature	0...+60 °C	
Storage Temperature	-25...+85 °C	
Permissible Humidity (Non-condensing)	RH 95%	
Altitude Limit	< 2000M	
Ingress Protection (IP)	IP20	
Pollution Severity	II	
Product Certification	CE	
Wire Range	0.2mm <sup>2</sup> ~1.5mm <sup>2</sup> (AWG 28~16)	
Suggested Terminals	DN00510D / DN00710D	

## Analog Input Module

Product Picture		
Product Model	GF2-AI01T	GF2-AI02T
<b>Technical Specifications</b>		
Number of Input Channels	4	
Voltage Supply(Field)	24 VDC (-15%~+20%)	
Current Consumption(Field)	Max. 9.5mA@24 VDC	
Voltage Supply(System)	24 VDC via DINKLE Bus	
Current Consumption(System)	Max. 22mA@24 VDC	
Resolution	16-bit	
Input Type	-10V ~ +10V	0mA ~ 20mA
	0V ~ +10V	4mA ~20mA
	0V ~ +5V	-
	1V ~ +5V	-
Input Signal Design	Differential signal	
Accuracy	±0.1%	
Input Impedance	≥1 MΩ (Impedance, Typical)	250Ω (Max)
Sampling Rate	10 ms	
Communication Interface	via DINKLE Bus	
Indicator	4 Green Input States	
Isolation Method	Photocoupler Isolation	
Connection Method	Push-in	
Common Type	4 Channels / 4COM.	
<b>General Specifications</b>		
Dimensions (W*D*H)	12 x 100 x 97mm	
Weight	60g	
Operating Temperature	0...+60 °C	
Storage Temperature	-25...+85 °C	
Permissible Humidity (Non-condensing)	RH 95%	
Altitude Limit	< 2000M	
Ingress Protection (IP)	IP20	
Pollution Severity	II	
Product Certification	CE	
Wire Range	0.2mm²~1.5mm²(AWG 28~16)	
Suggested Terminals	DN00510D / DN00710D	

## Analog Output Module

Product Picture		
Product Model	GF2-AQ01T	GF2-AQ02T
<b>Technical Specifications</b>		
Number of Output Channels	4	
Voltage Supply(Field)	24 VDC (-15%~+20%)	
Current Consumption(Field)	Max. 76mA@24 VDC	Max. 112mA@24 VDC
Voltage Supply(System)	24 VDC via DINKLE Bus	
Current Consumption(Field)	Max. 22mA@24 VDC	
Resolution	16-bit	
Output Type	-10V ~ +10V	0mA ~ 20mA
	0V ~ +10V	4mA ~20mA
	0V ~ +5V	-
	1V ~ +5V	-
Input Signal Design	Differential signal	
Output Impedance	>2 KΩ	< 500Ω
Communication Interface	via DINKLE Bus	
Indicator	4 Green Output States	
Isolation Method	Photocoupler Isolation	
Connection Method	Push-in	
Common Type	4 Channels / 4COM.	
<b>General Specifications</b>		
Dimensions (W*D*H)	12 x 100 x 97mm	
Weight	64g	
Operating Temperature	0...+60 °C	
Storage Temperature	-25...+85 °C	
Permissible Humidity (Non-condensing)	RH 95%	
Altitude Limit	< 2000M	
Ingress Protection (IP)	IP20	
Pollution Severity	II	
Product Certification	CE	
Wire Range	0.2mm²~1.5mm²(AWG 28~16)	
Suggested Terminals	DN00510D / DN00710D	

## Power Supply Module

Product Picture



Product Model

GFPS-0202

### Technical Specifications

Input Voltage Range	100 ~ 240 VAC
Inrush Current (Cold Start)	34 A
Rated Output Power	48 W / 2 A
Output Voltage	24 VDC ± 1%
Overload Protection	Hiccup mode
Overload Range	120–185% rated output power
Overvoltage Protection	Latching overload protection
Overvoltage Range	30~34 VDC

### General Specifications

Dimensions (W*D*H)	20 x 100 x 97 mm
Weight	126 g
Operating Temperature	-20...+60°C
Relative Humidity	RH 20...90%
Altitude Limit	< 2000 m
Ingress Protection (IP)	IP 20
Pollution Degree	II
Product Approval	CE
Product Approval	UL 61010-1 & UL 61010-2-201
Wire Range (IEC/UL)	0.2 mm <sup>2</sup> ~2.5 mm <sup>2</sup> (AWG 26~12)
Applicable Terminals	DN00708D / DN01008D / DN01508D

## Power Supply Module

Product Picture



Product Model

GFPS-0303

### Technical Specifications

Input Voltage Range	21 ~ 28.8 VDC
Max. Input Current	< 1.3 A
Rated Output Power	20 W / 4 A
Output Voltage	5 VDC ± 5%
Overload Protection	Latching overload protection
Overload Range	127–170% Rated output power
Overvoltage Protection	Latching overvoltage protection
Overvoltage Range	6.5 VDC ~ 6.7 VDC

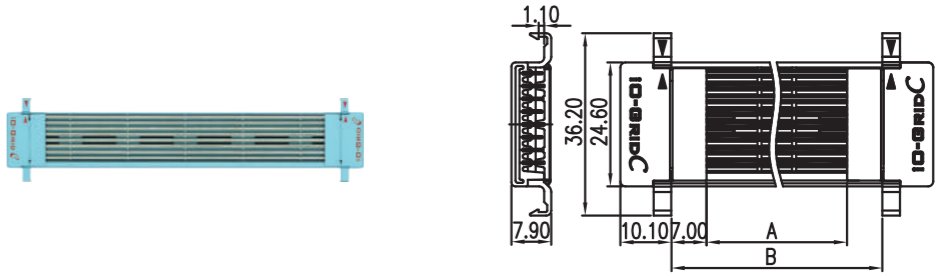
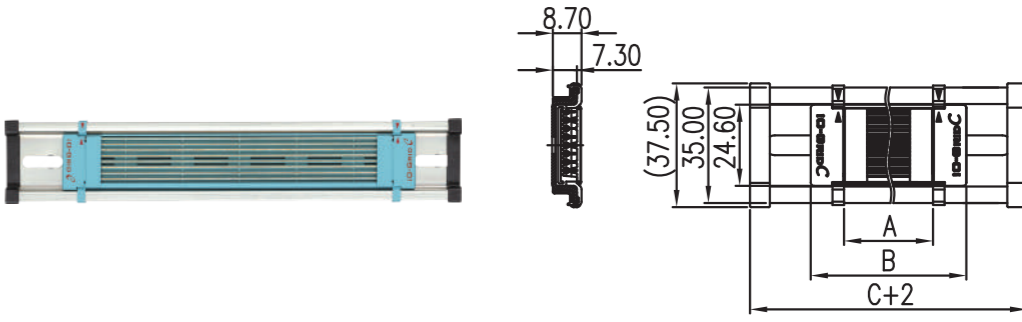
### General Specifications

Dimensions (W*D*H)	12 x 100 x 97 mm
Weight	68 g
Operating Temperature	-20...+60°C
Relative Humidity	RH 20...90%
Altitude Limit	< 2000 m
Ingress Protection (IP)	IP 20
Pollution Degree	II
Product Certification	CE
Product Approval	UL 61010-1 & UL 61010-2-201

## Edge Computing

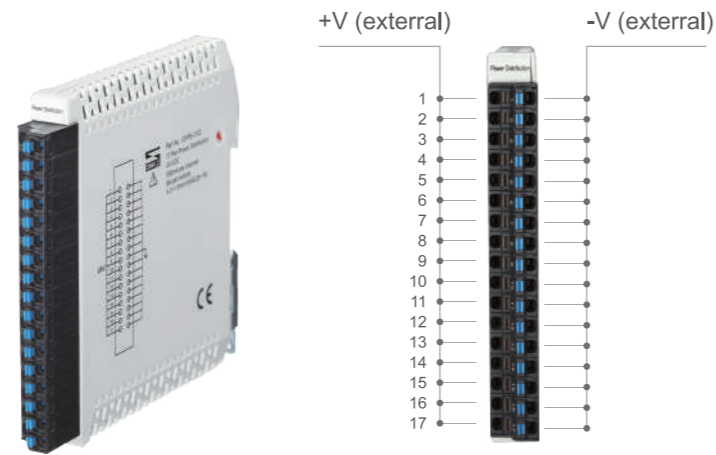
Product Picture	
<b>Product Model</b>	<b>GFPC-0303</b>
<b>Technical Specifications</b>	
CPU	Broadcom BCM2837B0 Cortex-A53, 64-bit SoC @ 1.2 GHz
Memory	32 GB eMMC Flash memory
Display	HDMI * 1
USB	USB 2.0 * 2
Ethernet	100 Mbps Port * 2
Indicator	LED for System status * 6
Serial Signal	RS485/RS422/RS232 * 1
Ext. Power Supply	5 VDC
Current Consumption	Max. 1A@5 VDC
<b>General Specifications</b>	
Dimensions (W*D*H)	40 x 100 x 97 mm
Weight	169 g
Operating Temperature	0...+60°C
Storage Temperature	-20...+85°C
Relative Humidity	RH 95%, non-condensing
Product Approval	CE
Wire Range (IEC/UL)	0.2 mm <sup>2</sup> ~ 1.5 mm <sup>2</sup> / AWG 28 ~ 16
Applicable Terminals	DN00510D / DN00710D

## Bus Board

Product Picture			
<b>Product Model</b>	<b>BS-0X0DRC</b>		
Product Dimensions	<b>A (mm)</b>	<b>B (mm)</b>	
BS-070DRC	61	95.2	
BS-000DRC	91	125.2	
BS-010DRC	121	155.2	
BS-020DRC	171	205.2	
BS-030DRC	221	255.2	
BS-040DRC	271	305.2	
BS-050DRC	331	365.2	
Product Picture			
<b>Product Model</b>	<b>BS-7XXDRC</b>		
Product Dimensions	<b>A (mm)</b>	<b>B (mm)</b>	<b>C (mm)</b>
BS-740DRC	61	95.2	200
BS-700DRC	91	125.2	200
BS-701DRC	121	155.2	200
BS-702DRC	171	205.2	300
BS-703DRC	221	255.2	300
BS-704DRC	271	305.2	400
BS-705DRC	331	365.2	400

## Power Distribution Module

Product Picture



Product Model

GFPB-0102

24 VDC power distribution

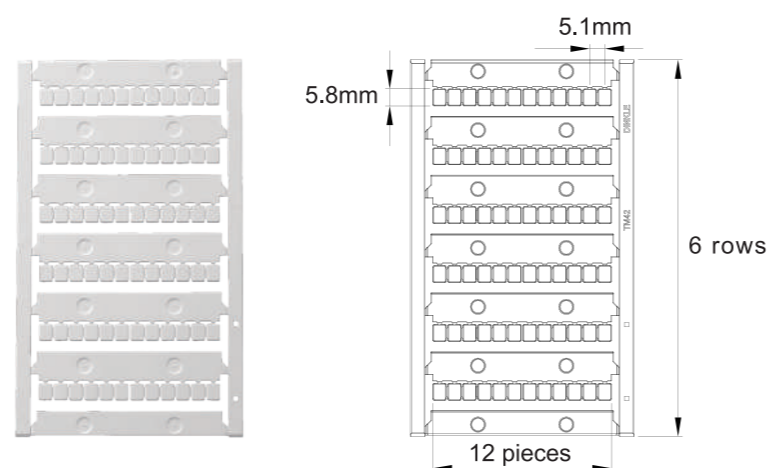
Ext. Power Supply

Wire Range (IEC/UL)

0.2 mm<sup>2</sup> ~ 1.5 mm<sup>2</sup> / AWG 28 ~ 16

## Marker

Product Picture



Product Model

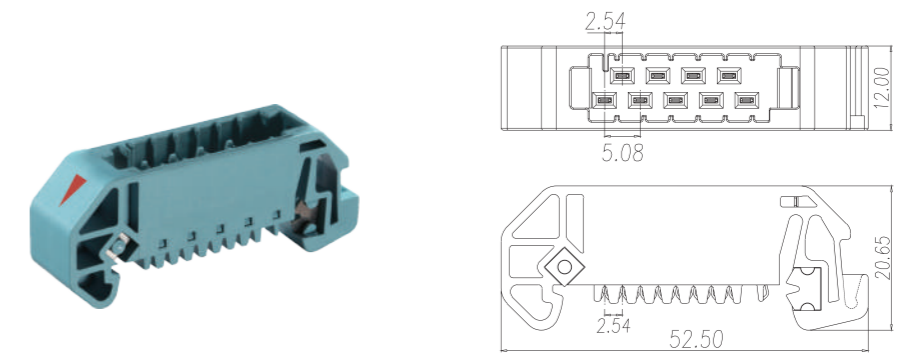
TM42W

For those who need printed markers, please scan the QR Code on the right to acquire more information on D-Thermo thermal printer products.



## Bus Board Accessories

Product Picture



Product Name

Adapter Plug

Product Model

BS-210D

Number of Channels

9

Rated Voltage

150V

Rated Current

8A

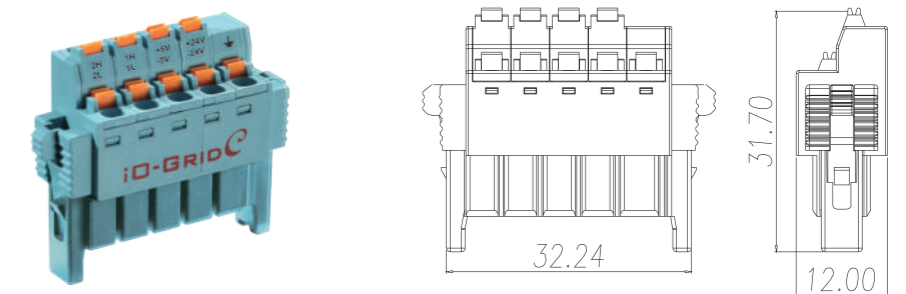
Withstand Voltage

1600V

Ambient Temperature

40°C~+105°C

Product Picture



Product Name

Plug

Product Model

BS-213D

Number of Channels

9

Rated Voltage

150V

Rated Current

8A

Withstand Voltage

1600V

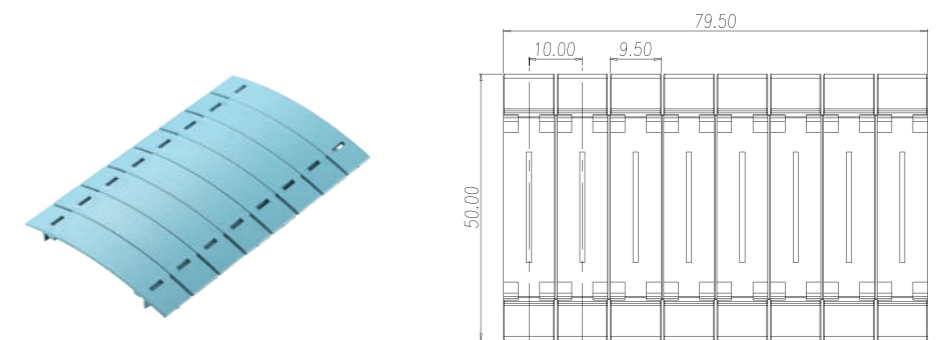
Ambient Temperature

-40°C~+105°C

Wire Range (IEC/UL)

0.2 mm<sup>2</sup> ~ 1.5 mm<sup>2</sup> / AWG 28 ~ 16

Product Picture



Product Name

Dust Cover

Product Model

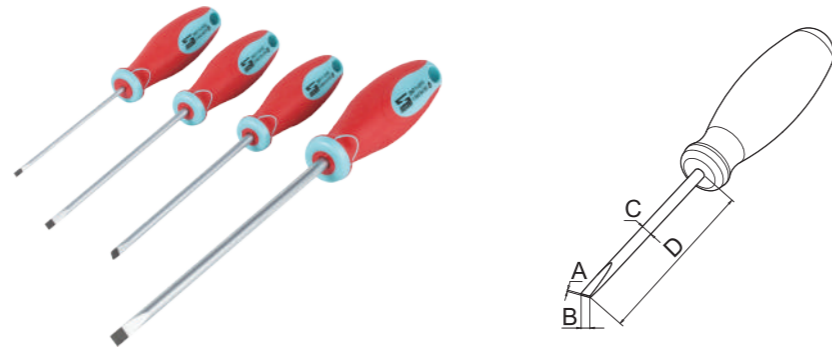
BS-C028D

Ambient Temperature

-40°C~+105°C

## Wiring Tool

Product Picture



Product Name	Flathead Screwdriver			
Product Model	DNT11-0102	DNT11-0107	DNT11-0109	DNT11-0111
Dimensions	2.5 x 75 mm	3.5 x 100 mm	4.0 x 100 mm	5.5 x 150 mm
A	2.5	3.5	4.0	5.0
B	0.4	0.6	0.8	1.0
C	2.5	3.5	4.0	5.0
D	75	100	100	150
E	21.6	21.6	21.6	27.2
F	70	70	70	90
Packing	12	12	12	12

Product Picture



Product Name	Phillips Screwdriver			
Product Model	DNT11-0201	DNT11-0202	DNT11-0205	DNT11-0208
Dimensions	#0 x 60	#1 x 80	#2 x 100	#3 x 150
A	-	-	-	-
B	-	-	-	-
C	3.0	5.0	6.0	8.0
D	60	80	100	150
E	21.6	27.7	33	37.5
F	70	90	108	122
Packing	12	12	12	6

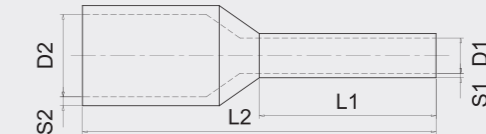
## Wiring Tool

Product Picture



Product Model	DNT13-0101	DNT04-2010A
Wire Range (IEC/UL)	0.08 mm <sup>2</sup> ~ 10 mm <sup>2</sup> / 28 ~ 7 AWG	0.6 mm <sup>2</sup> ~ 5 mm <sup>2</sup> / 20 ~ 10 AWG

External Appearance Picture



Product Model	Wire Range		Dimensions				Packing (pcs)		External Packaging Color
	AWG	mm <sup>2</sup>	D1	D2	L1	L2	bag	box	
DN00206D	24	0.2	0.75	1.9	6	10	1,000	10,000	● Light blue
DN00208D					8	12	1,000	10,000	
DN00306D	22	0.34	0.8	1.9	6	10	1,000	10,000	● Dark green
DN00308D					8	12	1,000	10,000	
DN00506D	20	0.5	1	2.6	6	12	500	5,000	○ White
DN00508D					8	14	500	5,000	
DN00510D					10	16	500	4,000	
DN00706D	18	0.75	1.2	2.8	6	12	500	4,000	● Grey
DN00708D					8	14	500	4,000	
DN00710D					10	16	500	4,000	
DN00712D					12	18	500	4,000	
DN01006D	-	1	1.4	3	6	12	500	3,000	● Red
DN01008D					8	14	500	3,000	
DN01010D					10	16	500	3,000	
DN01012D					12	18	500	3,000	
DN01508D	16	1.5	1.7	3.5	8	14	500	2,000	● Black
DN01510D					10	16	500	2,000	
DN01512D					12	18	500	2,000	
DN01518D					18	24	500	2,000	

The wire comparison table is defined based on UL486E, IEC998-1 and IEC947-7. Please refer to the comparison table to select suitable connecting terminals. The applicable terminals suggested in the specifications of the catalog are based on the comparison table.

## Water treatment system

### System Requirements

1. Various storage tanks are distributed on each floor of the factory at long distances from the master control room. If the traditional point-to-point wiring method is adopted, much wiring material would be wasted and the voltage would be significantly reduced.
2. Multiple digital and analog signal points for various storage tanks with high construction cost.
3. The number of storage tanks and monitoring points may be increased in the future. Therefore, the I/O extensibility and program adjustment ease is very important.

### Product Used

iO-GRID series coupler module, analog I/O module, digital I/O wire-saving relay module and USB adapter module.

### Application Method

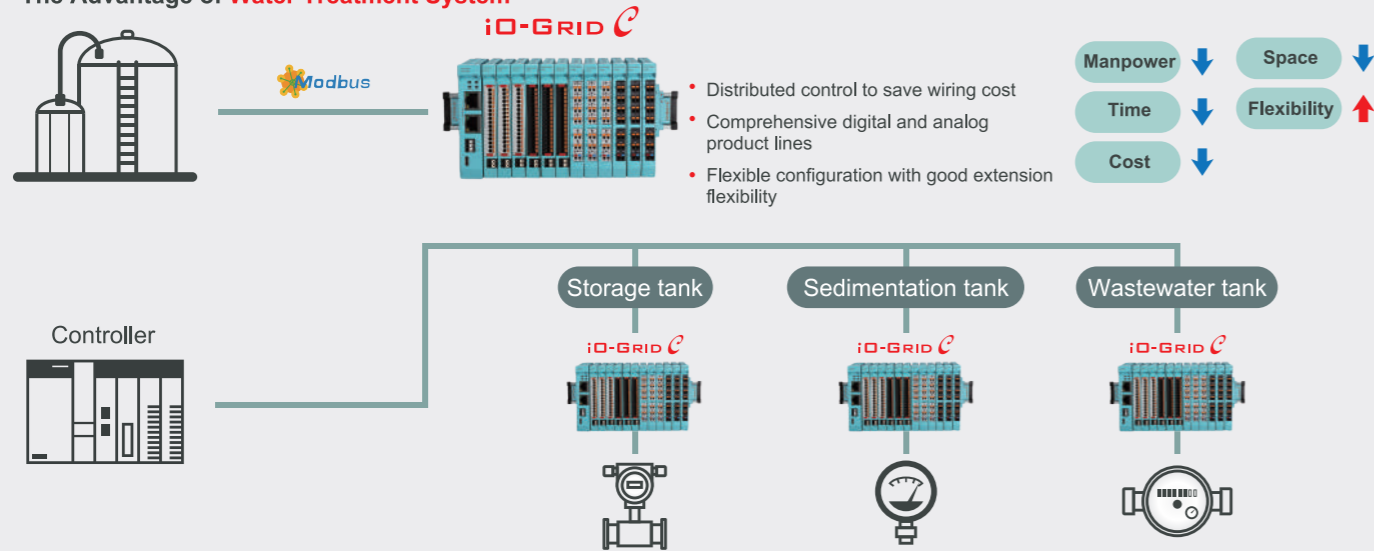
The Modbus communication method with distributed fieldbus I/O can collect the sensor data of equipment in each station to timely monitor the water level of the storage tank and related wastewater concentration, and operate the control valve.

### Project Highlights

Solve wiring problems for long distances between factory machines without rewiring and greatly reduce construction manpower and the wiring time and cost.

iO-GRID

### The Advantage of Water Treatment System



## Automobile part production line

### System Requirements

The automobile manufacturing process includes different production lines such as stamping, automobile body manufacturing, coating line, manufacturing of automobile power part and body assembly. Besides using complicated technology, each production line is very long, which requires data collection planning via distributed I/O modules and fieldbuses.

### Product Used

iO-GRID series coupler module, power module, analog I/O module, digital I/O wire-saving relay module and USB adapter module.

### Application Method

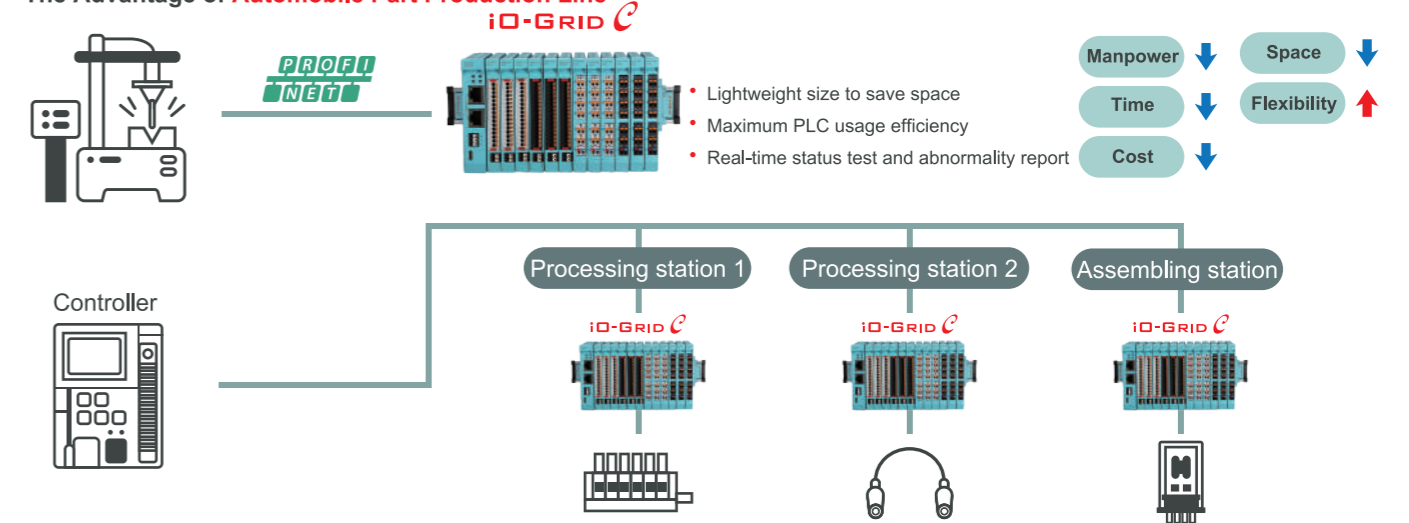
The PROFINET communication can rapidly connect to the master PLC system, computer and MES system and collect the machine status of each production line. Through the corresponding DAUDIN high-speed bus connection equipment, sensor signal, converter, servo motor and I/O signal, the information is synchronized with the conveyor belt, robotic arm and coating equipment to complete the entire automated production line of automobile parts.

### Project Highlights

The iO-GRID production line is introduced for compatibility with various PLC brands and long-distance control. In addition, by visualizing the machine status, it can assist in timely determination, analysis and adjustment of production parameters to further improve production efficiency, machine activation rate and reduce human resources.

iO-GRID

### The Advantage of Automobile Part Production Line



## Packing production line

### System Requirements

The packing production line is one of the most important sections in the manufacturing process. It includes diversified manufacturing equipment such as labeling, packing and sealing and requires standard and rapid distributed I/O for data collection.

### Product Used

iO-GRID series coupler module, power module, analog I/O module, digital I/O wire-saving relay module and USB adapter module.

### Application Method

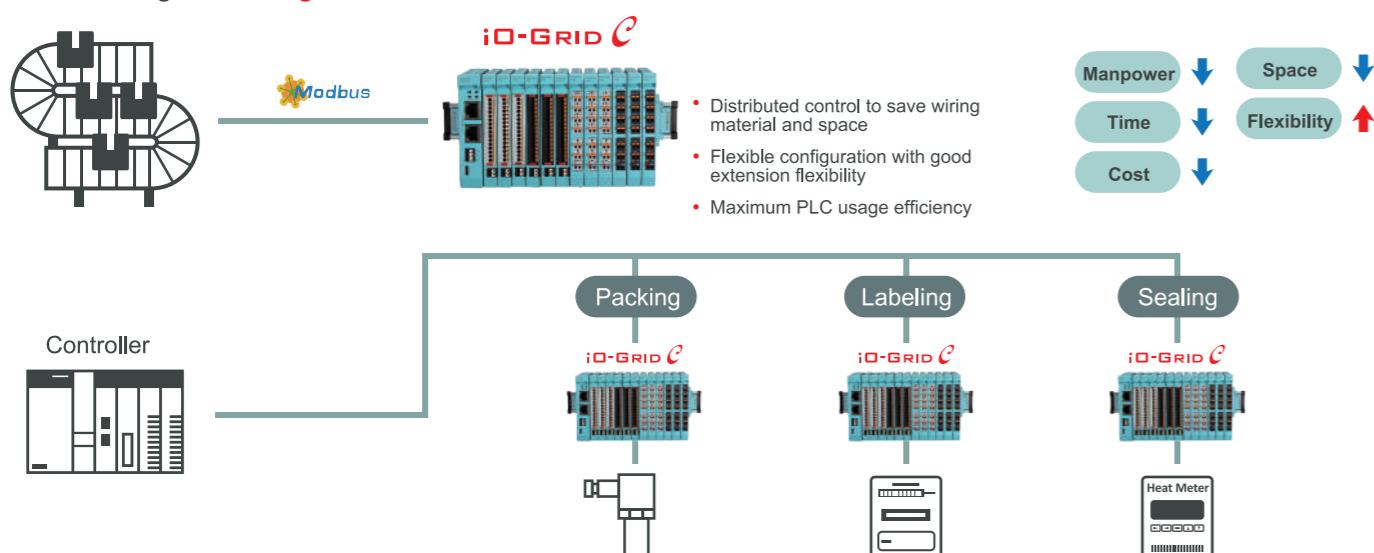
The Modbus communication method can rapidly connect to the master PCL system to quickly detect and collect data related to the machine movement status, equipment temperature and pressure using the DAUDIN high-speed bus connection equipment, sensor, signal converter, servo motor and robotic arm.

### Project Highlights

Distributed I/O can import the status information of automated packing machines into the machine management system for timely understanding and to serve as an important basis for machine activation improvement and manufacturing process optimization.

iO-GRID

### The Advantage of Packing Automation



## Solar energy monitor system

### System Requirements

Timely grasp the power generation of each solar panel while observing and gathering generation trend information to adjust the establishment location and improve the generating efficiency of the field.

### Product Used

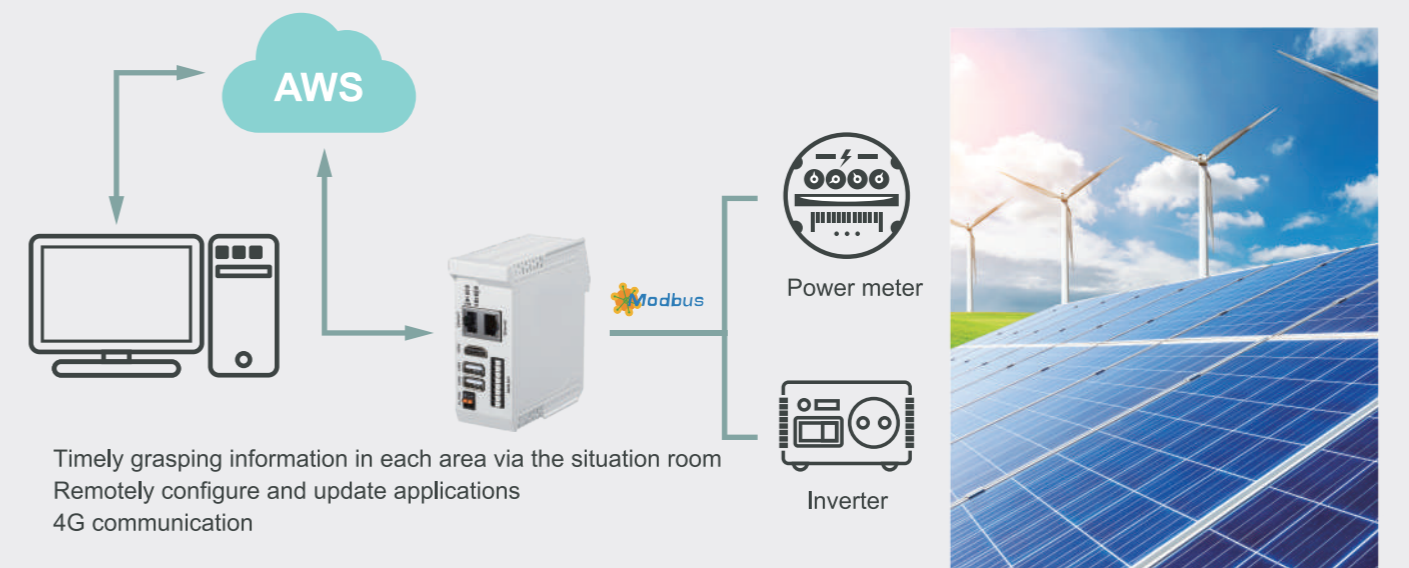
iO-GRID series module and edge computing.

### Application Method

The iO-GRID edge computing equipment can receive power meter and inverter data and information in the field and immediately send it to the cloud database for the customer to grasp the generating status in the field in a timely manner.

### Project Highlights

1. Reduce the field maintenance manpower and cost.
2. Enhance overall generation efficiency.



## Screw manufacturing factory

### System Requirements

The manufacturing process of a screw is: material processing → wire drawing → head shaping → thread rolling → thread detection → heat treatment → tensile test → screw surface treatment → finished product packing for shipment. Each part of the manufacturing process requires corresponding production equipment. It is expected that the management of multiple pieces of equipment in the factory can be achieved through equipment digitalization, to collect the equipment activation status, productivity and working time.

### Product Used

DAUDIN digital machine communication system, edge computing, **iO-GRID** series coupler module, power module, analog I/O module, digital I/O module, wire-saving relay module, USB adapter module.

### Application Method

Through the DAUDIN digital machine communication system with **iO-GRID** edge computing and I/O series products, the **Modbus** communication protocol is adopted to quickly connect the I/O module of each machine to collect the machine status such as startup, stoppage, productivity, equipment movement or abnormal on-site information. The information is processed through edge computing and then collected and analyzed through the digital machine communication system.

### Project Highlights

The system can go online within two weeks after introduction and there is no need to halt machines during construction. The system can assist the factory in saving costs and improving production efficiency, easily and rapidly conducting digital factory transformation.



## Stamping plant

### System Requirements

Stamping is often the first process in most machine manufacturing and is currently also one of the machine types with the largest number in the factory. It often requires collecting the activation status and productivity of the stamping equipment, and related production information can be remotely monitored.

### Product Used

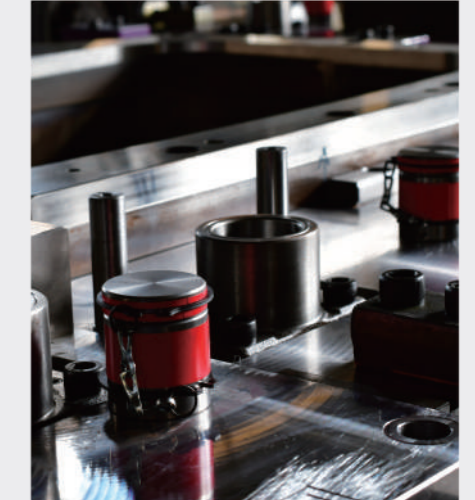
DAUDIN digital machine communication system, **iO-GRID** edge computing, power module, analog I/O module, digital I/O module, wire-saving relay module, USB adapter module.

### Application Method

The **Modbus** communication can rapidly connect to the I/O module of each machine to collect the machine status such as startup, stoppage, productivity, equipment movement or abnormal on-site information. The information is processed through edge computing and then collected and analyzed through the digital machine communication system.

### Project Highlights

The system can go online within two weeks after introduction and there is no need to halt machines during construction. The system can assist the factory in saving costs and improving production efficiency, easily and rapidly conducting digital factory transformation.



## Automated logistics sorting system

### System Requirements

Due to changes in global consumption patterns, the delivery time of e-commerce companies has become a key for success. The planning of data collection via distributed I/O modules and fieldbuses is required because of the different distances of automated transportation equipment to effectively reduce deployment costs and rapidly complete the setup of large sorting systems.

### Product Used

**iO-GRID** series coupler module, power module, digital I/O module, wire-saving relay module and USB adapter module.

### Application Method

The **iO-GRID** series distributes the I/O along the conveyor belt and connects to the master PLC or IPC system via common communication methods such as **PROFINET** or **EtherCAT** for the simultaneous control of the sorting conveyor belt system.

### Project Highlights

The **iO-GRID** remote I/O solution can effectively reduce the cost of automated sorting systems and achieve simultaneous control functions via high-speed fieldbuses to quickly complete the setup of large sorting systems.



## Intelligent agriculture

### System Requirements

In response to changes in the global population structure and climate, the reduction of manpower engaged in agriculture is an inevitable trend. Therefore, industrial transformation is extremely urgent. How to utilize intelligentization and digitalization technology to assist in the upgrading of industry has become an important issue for personnel engaged in agriculture.

### Product Used

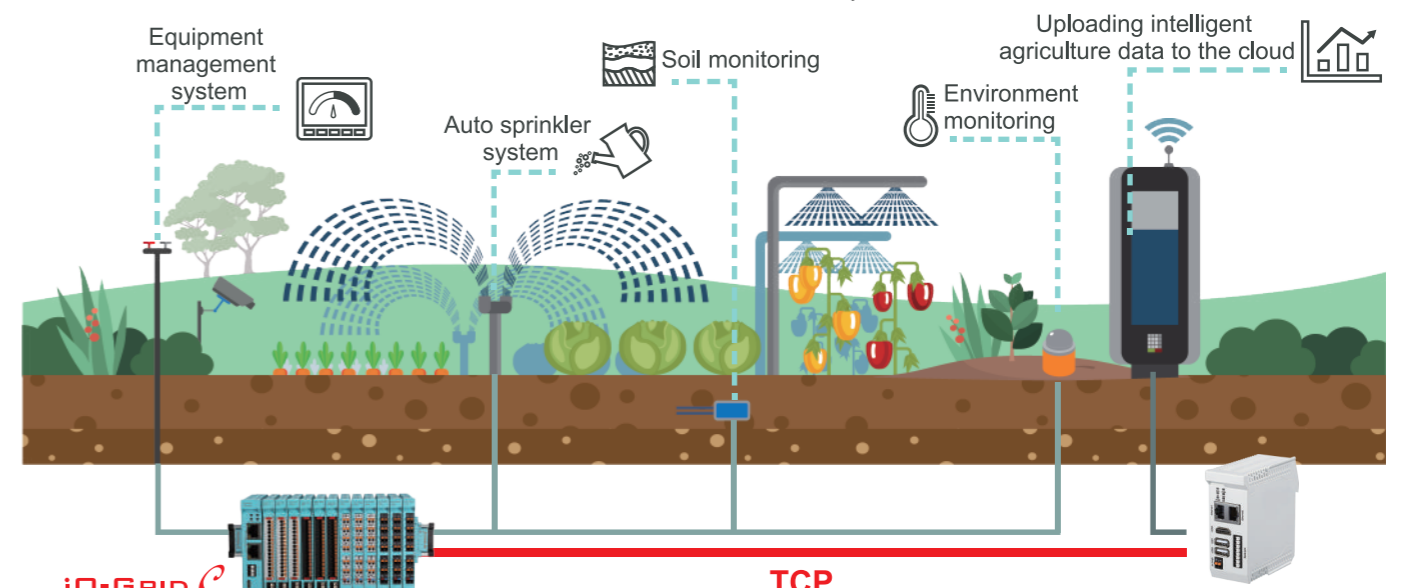
Edge computing, **iO-GRID** series, digital and analog I/O module and temperature module.

### Application Method

The various types of I/O module in the **iO-GRID** series can collect the signal of each sensor (e.g. thermometer, hygrometer, soil pH detection and illumination meter) and various meters while **iO-GRID** edge computing paired with wireless transmission technology can send the field information to the cloud database in a timely manner.

### Project Highlights

A computer or mobile device can be used to timely grasp field information, improve operating efficiency and crop quality as well as save manpower and time cost to reduce agricultural losses due to natural disasters or force majeure factors.



Providing year-round uninterrupted onsite environment and equipment monitoring

The edge computing device uploads the site data to the cloud via MQTT



# Industrial Application

## Factory monitoring

### System Requirements

Fulfill the objective of unmanned factory management.

### Product Used

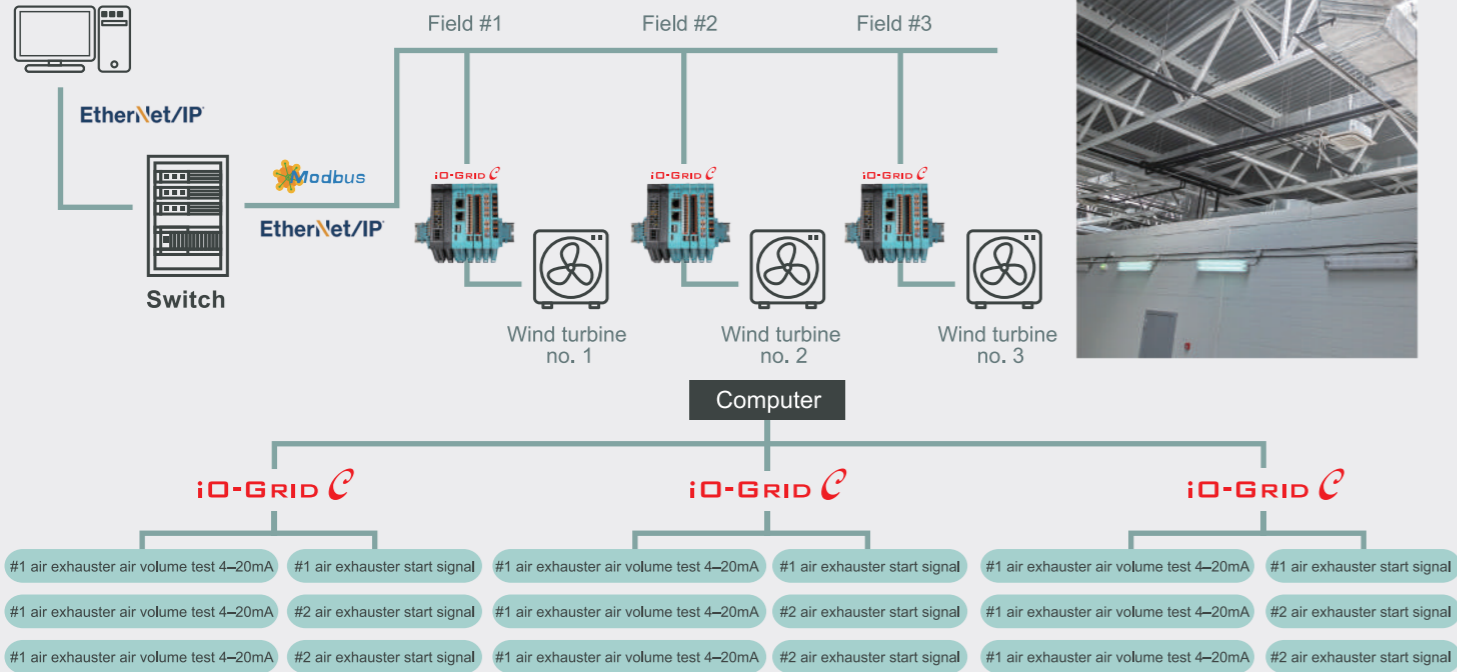
iO-GRID coupler module, digital I/O module.

### Application Method

Deploy the iO-GRID product in each section of large factory areas. The Modbus communication protocol can connect the I/O modules in each section to the central control system.

### Project Highlights

By integrating the customer's IT system, it can unify the monitoring of fans in each section and solve the customer's pain points of manually turning fans on/off and the regular calibration of timing controllers.



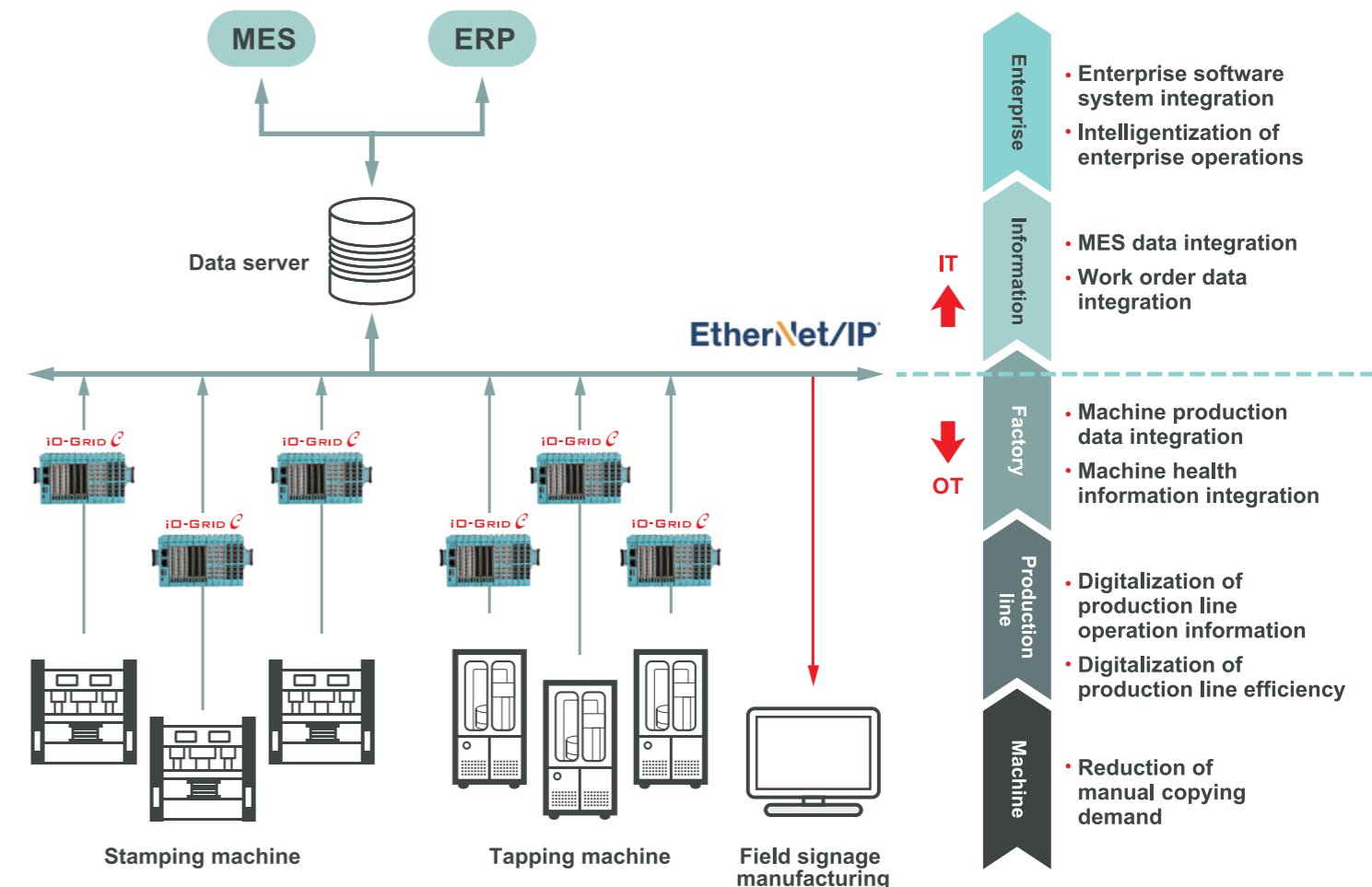
## Dinkle Kunshan stamping plant

### Background Information

Dinkle Electric Machinery was established in 2000, which is an important production base of the Dinkle group in China. From product R&D, mold manufacturing to plasticizing, metal stamping and screw processes to surface treatment, heat treatment and the final quality inspection, Dinkle Electric Machinery is equipped with vertically integrated production capabilities. To effectively integrate the group's resources and improve production efficiency, we have been continuously planning the introduction of SAP, AVM, and MES systems since 2013. The stamping plant manufacturing process started planning for the introduction of MES since 2018, while the iO-GRID product solution played an important role in information collection on the manufacturing site.



### iO-GRID Industrial Application Picture



## Corresponding application of robotic arms

### System Requirements

Robotic arms play an important role in the automated production process and are responsible for many different types of operating tasks. In the manufacturing process, robotic arms often need to collaborate with surrounding automated equipment. The close collaboration requires I/O points to send signals and commands for an accurate and smooth manufacturing process.

### Product Used

iO-GRID coupler module, I/O module.

### Application Method

There are only a few I/O points in the control boxes of general robotic arms and they often require third-party I/O modules to meet the needs of I/O point extension. There are cases of actual connections of iO-GRID series products with the robotic arms of many manufacturers. The I/O points required by the robotic arms can be rapidly extended by a simple setting.

### Project Highlights

Rapidly meet the demand for I/O point extension and reduce the system setup cost.

