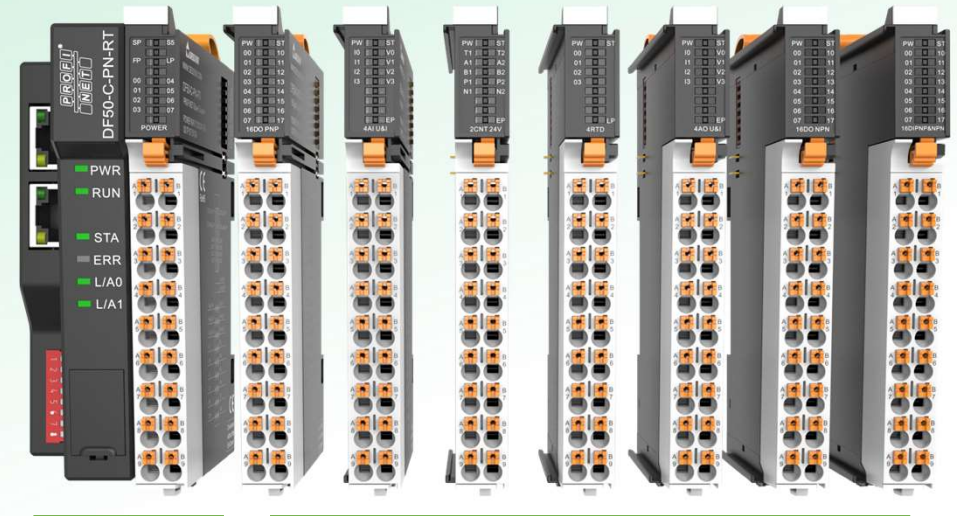
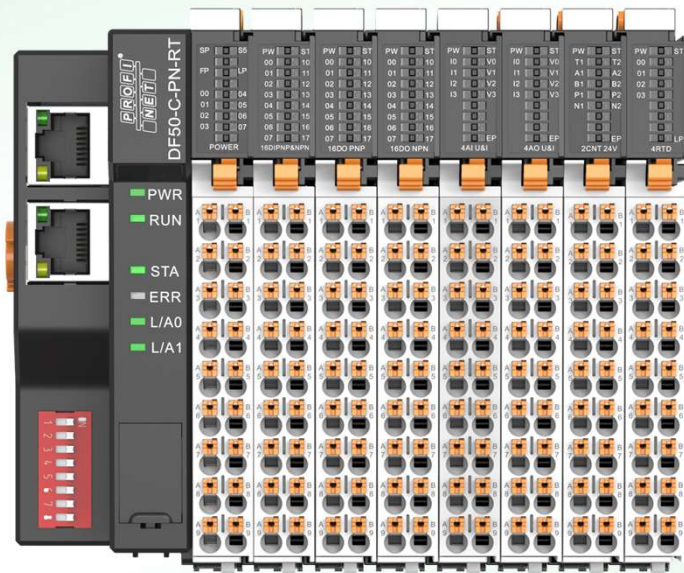


DF50 Remote I/O

DF50 series I/O module



Bus coupler

I/O module

Bus coupler

- ✓ The bus coupler comes with 8 digital inputs
- ✓ Supports multiple industrial Ethernet bus protocols
- ✓ The bus coupler support 32 modules

Tool free

- ✓ No tools required for module installation and disassembly
- ✓ No tools required to install and remove front connectors
- ✓ No tools required for wiring and dismantling

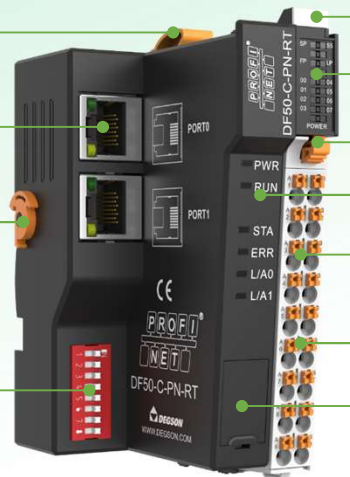
I/O module

- ✓ The I/O signal is independently powered, no need to add power module
- ✓ Digital input compatible with both PNP and NPN signals
- ✓ The analog input/output module is compatible with current and voltage, supports multiple ranges and each channel can be independently selected, and supports 2, 3, and 4 wire connection methods

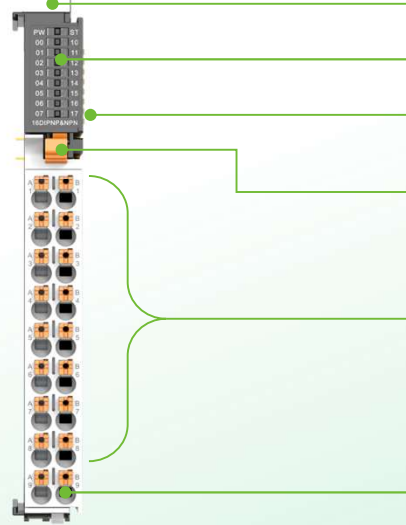
Appearance

- ✓ 12mm ultra-thin volume, sharp blade shape
- ✓ The module has an identification system
- ✓ The module is grounded through the back metal connection DIN-rail

- DIN-Rail clip
- Bus interface 2 x RJ45
- DIN-Rail clip
- Dipswitch
- Module identification
- Backplane bus/signal indicator
- Front connector snap
- Bus indicator
ERR / Link / RUN / PWR / STA
- Coupler power wiring
- Digital input x 8
- Upgrade Maintenance Window



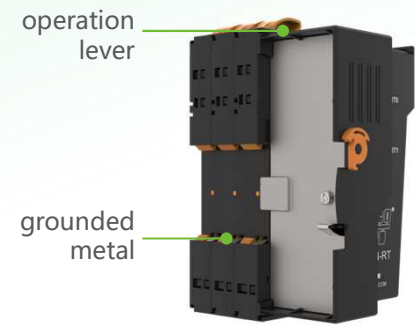
- 12mm
- 105mm
- Module identification
- LED indicator x 18
- Module side communication/power supply connection
- Front connector snap
- 16 x Signal wiring holes
- 2 x Module power supply holes DC24V



- PUSH-IN, no tools required for wire connection and disassembly



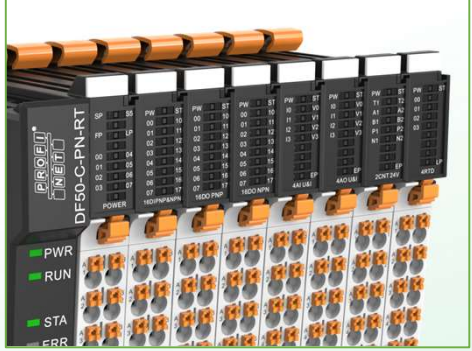
- Pluggable front connector



- Tool free manual operation lever
- The module is grounded through the back metal connection DIN-rail



- Bus coupler can support up to 32 modules



- Module has identification
- The module indicator system contains information such as signals, power, faults ...



- Communication between modules through side connecting finger
- Module power supply is connected through side metal clips



DF50-C-PN-RT

PROFINET, 2 RJ45, expandable 32 modules, 24VDC

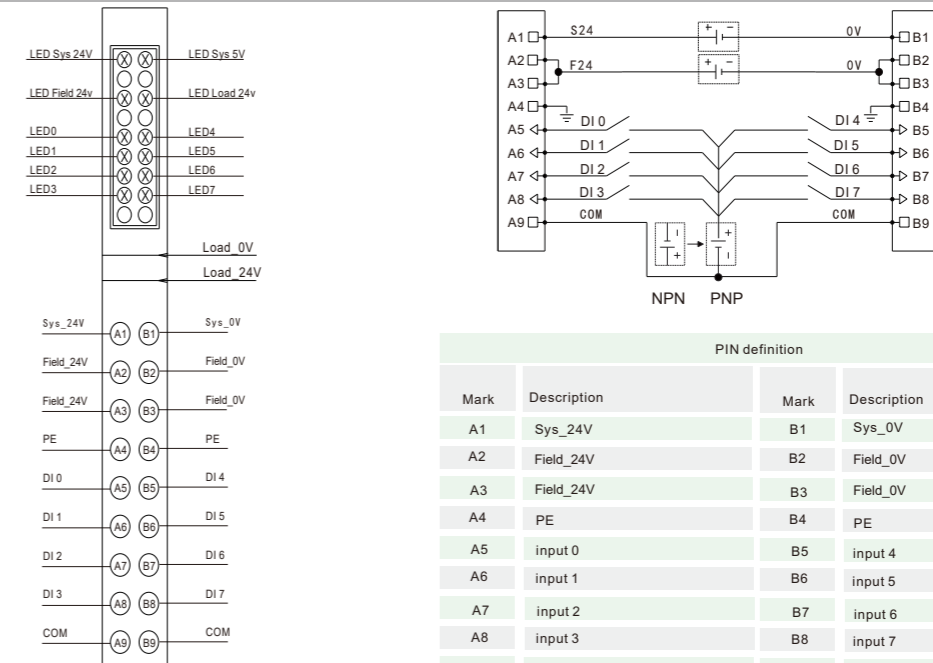
Features

- 8 DI input module built-in included.
- LED display working status, alarm and bus fault
- PROFINET name/ID can be assigned by DIP-switches or from software
- Two PROFINET interface ports (RJ45, 10/100Mbps).
- With Media Redundancy Protocol.

Specification		Digital Specification	
Product	DF50-C-PN-RT	Number of channels	8
Communication protocol	PROFINET	Data size	1 Byte
Transmission rate	10/100Mbps, full duplex	Signal type	NPN & PNP
Transmission distance	100 meters	"0" signal voltage	<5V
PDO data	1024 bytes	"1" signal voltage	>15V
Number of extensible modules	32	Connection type	1-line
Address mapping	Yes	Reverse protection	Yes
Address setting	PROFINET specification	Isolation method	Photoelectric isolation
Transmission medium	Class 5 twisted pair cable	Fault diagnosis	Yes
Isolation method	Electrical isolation	Typical input current	0.6mA
Features	RT, conforming to Class C, MRP, automatic addressing/topology detection	Fault diagnosis	2.3mA
		Typical input current	2.1mA
Alarm function	Diagnostic alarm, process alarm, plug and unplug connector alarm	Fault diagnosis	2.4mA
		Filtering time	0.2ms-40ms configurable
Minimum cycle time	1ms		0.20%

Power Supply Parameters			
Connection type	PUSH-IN type terminal block	The minimum area of a wire (AWG)	AWG26
Working voltage	24V DC +20 %/ -15 %	Strip length	8...9mm
Current without load	<350mA	Internal system rated voltage	5VDC
Maximum area of wire	1.5mm ²	Internal system rated current	2.5A
Maximum area of wire (AWG)	AWG16	Rated voltage of internal load	24V(20.4VDC~28.8VDC)
The minimum area of a wire	0.14mm ²	Internal load rated current	0.75A

Product	DF50-C-PN-RT
Mechanical Structure	
Protection grade	IP20
Size(H X W X D)	104mm X 48mm X 75mm
Installation type	35mm DIN
Work Environment	
Working temperature	25...60°C
Storage temperature	-40...85°C
Relative humidity	5...95%RH(non-condensing)
LED Status Indicator	
PWR	Green: Power is working
RUN	Green: I/O system is running
STA	Blinking green: The module is working
ERR	Red: An error occurred between I/O system and module
L/A0	Green : PORT 1 connected successfully.
	Green blinking : Port 1 has data communication.
L/A1	Green : PORT 2 connected successfully.
	Green blinking : Port 2 has data communication.
Sys 24v	Green:The system power input is normal
Sys 5v	Green: The system power output is normal
Field 24v	Green: Power input is normal
Load 24v	Green: The load power output is normal

Wiring Diagram


PIN definition			
Mark	Description	Mark	Description
A1	Sys_24V	B1	Sys_0V
A2	Field_24V	B2	Field_0V
A3	Field_24V	B3	Field_0V
A4	PE	B4	PE
A5	input 0	B5	input 4
A6	input 1	B6	input 5
A7	input 2	B7	input 6
A8	input 3	B8	input 7
A9	COM	B9	COM

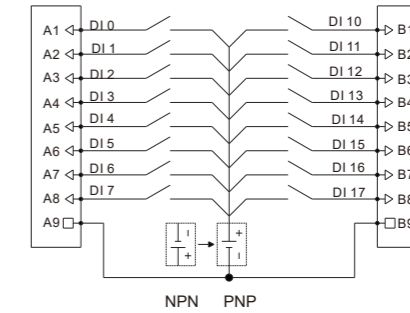
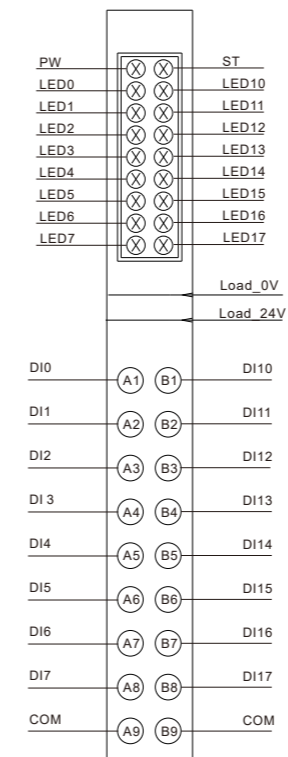


DF50-M-16DI-P/N

Digital input module, 16 ports, PNP/NPN, 24VDC

Specification	
Product	DF50-M-16DI-P/N
Number of channels	16
Data size	2 Byte
Signal type	NPN & PNP
"NO" signal voltage	>11V
"OFF" signal voltage	<5V
Connection type	1-line, Type 1/Type 3, Refer to IEC 61131-2
Reverse protection	Yes
Isolation method	Photoelectric isolation
Fault diagnosis	Yes
Typical input current	0.6mA
Fault diagnosis	2.3mA
Typical input current	2.1mA
Fault diagnosis	2.4mA
Filtering time	0.2ms-40ms configurable
Precision	0.20%
Power Supply Parameters	
Connection type	PUSH-IN type terminal block
Working voltage	24V DC +20% / -15%
System feed current	<30mA
Maximum area of wire	1.5mm ²
Maximum area of wire (AWG)	AWG16
The minimum area of a wire	0.14mm ²
The minimum area of a wire (AWG)	AWG26
Strip length	8...9mm

Product	DF58-M-16DI-P/N
Mechanical Structure	
Protection grade	IP20
Size(H X W X D)	104mm X 12mm X 75mm
Installation type	35mm DIN
Work Environment	
Working temperature	-25...60°C
Storage temperature	-40...85°C
Relative humidity	5...95%RH(non-condensing)
LED Status Indicator	
PW	Green: Internal bus power supply is normal
ST	Power on stage: green on: module initialization abnormal, green off: module initialization normal Operation phase: Green flashing: The internal bus of the module is working normally, green off: The internal bus of the module is working abnormally
LED	Green: input signal is valid
Wiring Diagram	



Pin	Description	Pin	Description
A1	input 0	B1	input 10
A2	input 1	B2	input 11
A3	input 2	B3	input 12
A4	input 3	B4	input 13
A5	input 4	B5	input 14
A6	input 5	B6	input 15
A7	input 6	B7	input 16
A8	input 7	B8	input 17
A9	COM	B9	COM

COM is the common terminal for all inputs:
 DI0-DI7, DI10-17
 Connect COM to +24VDC for NPN operation
 Connect COM to 0VDC for PNP operation



DF50-M-16DO-N

Digital output module, 16 ports, NPN, 24VDC



DF50-M-16DO-P

Digital output module, 16 ports, PNP, 24VDC

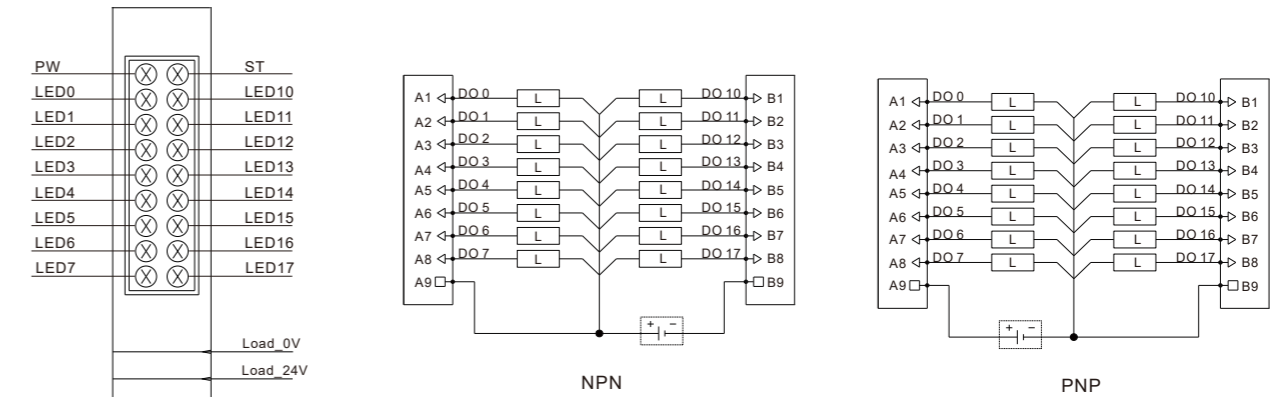
Specification

Product	DF50-M-16DO-N	DF50-M-16DO-P
Number of channels	16	
Data size	2 Byte	
Signal type	NPN	PNP
"0" signal voltage	high-impedance state	high-impedance state
"1" signal voltage	0V DC	24V DC
Connection type	1-line	
Reverse protection	Yes	
Isolation method	Photoelectric isolation	
Switching Frequency (resistance/lamp load)	<1000Hz	
Switching Frequency (inductive load)	<0.2Hz	
Response Time of the Protection Circuit	<100µs	
Output current per channel(MAX)	500 mA	
Load type	Inductive (7.2W/point, 24W/module), resistive (0.5A/point, 4A/module), light (5W/point, 18W/module)	

Power Supply Parameters

Connection type	PUSH-IN type terminal block	
Working voltage	24V DC +20 %/ -15 %	
System feed current	<75mA	<100mA
Maximum area of wire	1.5mm ²	
Maximum area of wire (AWG)	AWG16	
The minimum area of a wire	0.14mm ²	
The minimum area of a wire (AWG)	AWG26	
Strip length	8...9mm	

Product	DF50-M-16DO-N	DF50-M-16DO-P
Mechanical Structure		
Protection grade	IP20	
Size(H X W X D)	104mm X 12mm X 75mm	
Installation type	35mm DIN	
Work Environment		
Working temperature	-25...60°C	
Storage temperature	-40...85°C	
Relative humidity	5...95%RH(non-condensing)	
LED Status Indicator		
PW	Green: Internal bus power supply is normal	
ST	Power on stage: green on: module initialization abnormal, green off: module initialization normal	
	Operation phase: Green flashing: The internal bus of the module is working normally, green off: The internal bus of the module is working abnormally	
LED	Green: input signal is valid	
Wiring Diagram		



PIN definition			
Mark	Description	Mark	Description
A1	output 0	B1	output 10
A2	output 1	B2	output 11
A3	output 2	B3	output 12
A4	output 3	B4	output 13
A5	output 4	B5	output 14
A6	output 5	B6	output 15
A7	output 6	B7	output 16
A8	output 7	B8	output 17
A9	24V	B9	COM



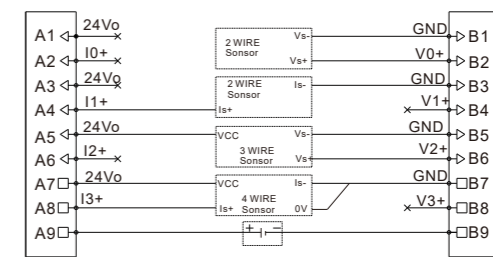
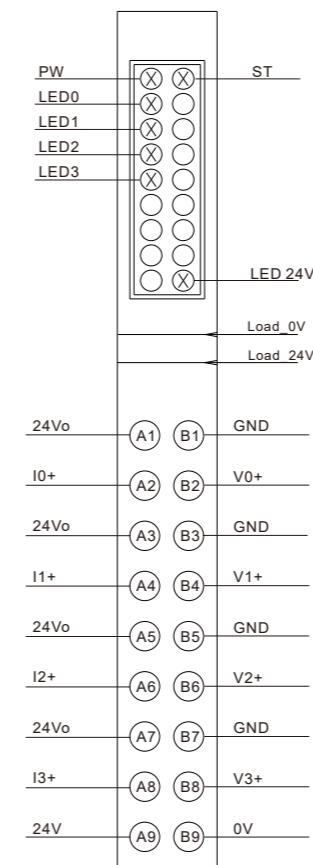
DF50-M-4AI-UI-6

Analog input module, 4 inputs, voltage type, current type

Specification	
Product	DF50-M-4AI-UI-6
Number of channels	4
Data size	8 Byte
Voltage test range	±10V, 0-10V, 2-10V, ±5V, 0-5V, 1-5V
Current test range	±20mA, 0-20mA, 4-20mA
Connection type	2/3/4-line
Reverse protection	Yes
Isolation method	Galvanic isolation
Fault diagnosis	Yes
Diagnostic reporting	Yes
Resolution	16 Bit
Signal type	single-ended
Filter parameter configuration	The software filtering time can be configured through the upper controller
Input accuracy	±0.20%
Conversion time	60us/channel
Sampling time	4-channel 250us
Power Supply Parameters	
Connection type	PUSH-IN type terminal block
Working voltage	24V DC +20 % / -15 %
System feed current	<120mA
Maximum area of wire	1.5mm ²
Maximum area of wire (AWG)	AWG16
The minimum area of a wire	0.14mm ²
The minimum area of a wire (AWG)	AWG26
Strip length	8...9mm

Product	DF50-M-4AI-UI-6
Mechanical Structure	
Protection grade	IP20
Size(H X W X D)	104mm X 12mm X 75mm
Installation type	35mm DIN
Work Environment	
Working temperature	-25...60°C
Storage temperature	-40...85°C
Relative humidity	5... 95%RH(non-condensing)
LED Status Indicator	
PW	Green: Internal bus power supply is normal
ST	Power on stage: green on: module initialization abnormal, green off: module initialization normal Operation phase: Green flashing: The internal bus of the module is working normally, green off: The internal bus of the module is working abnormally
LED	Green flashing: channel sampling is normal; Green off: signal is 0

Wiring Diagram



PIN definition			
Mark	Description	Mark	Description
A1	24Vo	B1	GND
A2	Current input 0+	B2	Voltage input 0+
A3	24Vo	B3	GND
A4	Current input 1+	B4	Voltage input 1+
A5	24Vo	B5	GND
A6	Current input 2+	B6	Voltage input 2+
A7	24Vo	B7	GND
A8	Current input 3+	B8	Voltage input 3+
A9	Load_24V	B9	Load_0V



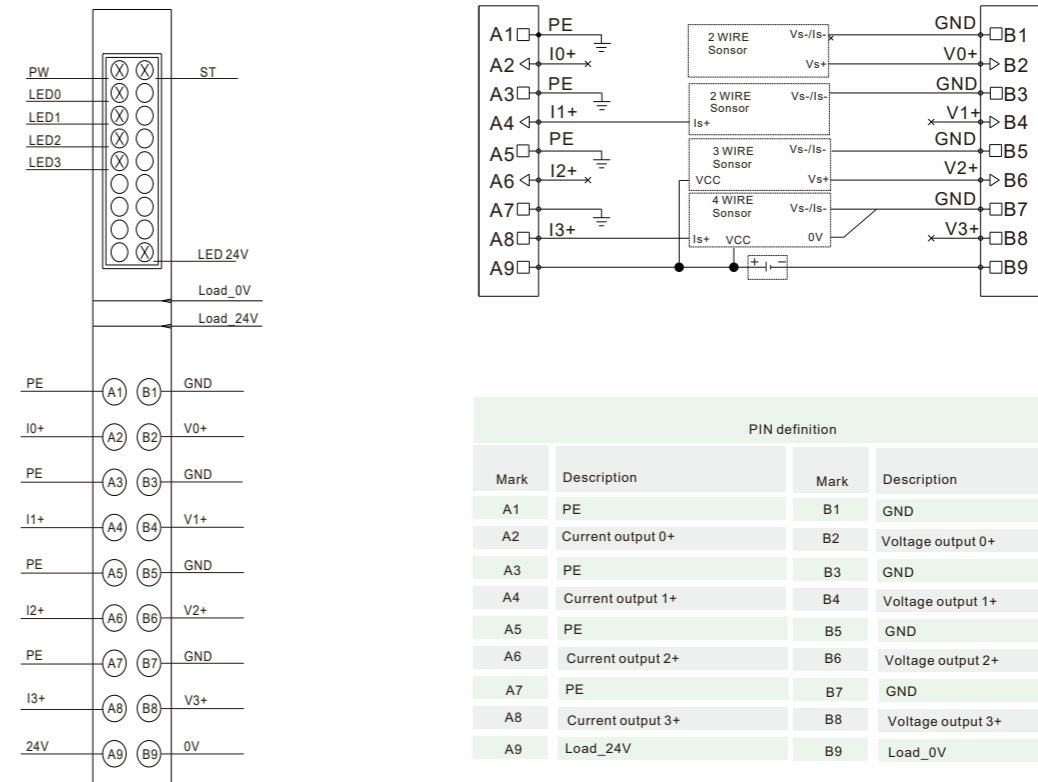
DF50-M-4AO-UI-6

Analog output module, 4 inputs, voltage type, current type

Specification	
Product	DF50-M-4AO-UI-6
Number of channels	4
Data size	8 Byte
Voltage output range	±10V, 0-10V, 2-10V, ±5V, 0-5V, 1-5V
Current output range	±20mA, 0-20mA, 4-20mA
Signal type	single-ended
Connection type	2/3/4-wire
Overcurrent protection	Yes
Isolation method	Magnetic isolation
Fault diagnosis	Yes
Resolution	16 Bit
Output accuracy	±0.50%
temperature coefficient	<30 ppm/K
Independent channel	Yes
Conversion time	60us/channel
Power Supply Parameters	
Connection type	PUSH-IN type terminal block
Working voltage	24V DC +20 %/ -15 %
System feed current	<110mA
Maximum area of wire	1.5mm ²
Maximum area of wire (AWG)	AWG16
The minimum area of a wire	0.14mm ²
The minimum area of a wire (AWG)	AWG26
Strip length	8...9mm

Product	DF58-M-4AO-UI-6
Mechanical Structure	
Protection grade	IP20
Size(H X W X D)	104mm X 12mm X 75mm
Installation type	35mm DIN
Work Environment	
Working temperature	-25...60°C
Storage temperature	-40...85°C
Relative humidity	5... 95%RH(non-condensing)
LED Status Indicator	
PW	Green: Internal bus power supply is normal
ST	Power on stage: green on: module initialization abnormal, green off: module initialization normal Operation phase: Green flashing: The internal bus of the module is working normally, green off: The internal bus of the module is working abnormally
LED	Green flashing: channel sampling is normal; Green off: signal is 0

Wiring Diagram





DF50-M-4RTD-PT

Thermal Resistance (RTD) measurement module, 16 bit resolution, 4 channels

Specification	
Product	DF50-M-4RTD-PT
Number of channels	4
Data size	8 Byte
Signal type	Thermal resistance
Signal type	Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni 200, Ni500, Ni1000, Cu10, 40 Ω, 80 Ω, 150 Ω, 300 Ω, 500 Ω, 1 kΩ, 2 kΩ, 4 kΩ
Connection type	2/3/4-line
Reverse protection	Yes
Isolation method	Isolation between each channel and the field layer, and isolation between channels
Fault diagnosis	Yes
Resolution	16bit, 0.1°C/ each number
Frequency interference suppression	50Hz 60Hz 400Hz
Diagnosis	Disconnection, Parameter assignment error
Process alarm	Upper/Lower limit, per channel
Temperature coefficient	±50ppm/K max.
Measuring range	Thermal resistance
Precision	'max. 0.2 % FSR / 0.3 % FSR for Ni sensors / 0.6 % FSR for Cu10
Conversion time	100-800ms, configurable

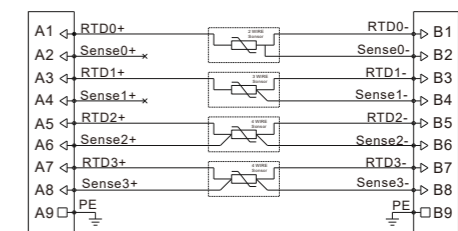
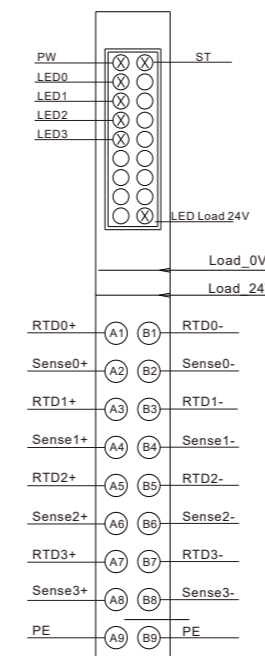
Product	DF50-M-4RTD-PT
Power Supply Parameters	
Connection type	PUSH-IN type terminal block
Working voltage	24V DC +20 %/ -15 %
System feed current	<100mA
Maximum area of wire	1.5mm ²
Maximum area of wire (AWG)	AWG16
The minimum area of a wire	0.14mm ²
The minimum area of a wire (AWG)	AWG26
Strip length	8...9mm

Mechanical Structure	
Protection grade	IP20
Size(H X W X D)	104mm X 12mm X 75mm
Installation type	35mm DIN

Work Environment	
Working temperature	-25...60°C
Storage temperature	-40...85°C
Relative humidity	5... 95%RH(non-condensing)

LED Status Indicator	
PW	Green: Internal bus power supply is normal
ST	Power on stage: green on: module initialization abnormal, green off: module initialization normal Operation phase: Green flashing: The internal bus of the module is working normally, green off: The internal bus of the module is working abnormally
LED	Green flashing: channel sampling is normal; Green off: signal is 0

Wiring Diagram



PIN definition			
Pin	Description	Pin	Description
A1	RTD0+	B1	RTD0-
A2	Sense0+	B2	Sense0-
A3	RTD1+	B3	RTD1-
A4	Sense1+	B4	Sense1-
A5	RTD2+	B5	RTD2-
A6	Sense2+	B6	Sense2-
A7	RTD3+	B7	RTD3-
A8	Sense3+	B8	Sense3-
A9	PE	B9	PE



DF50-M-2CNT-PIL-24

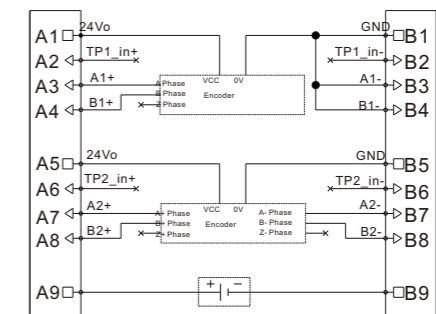
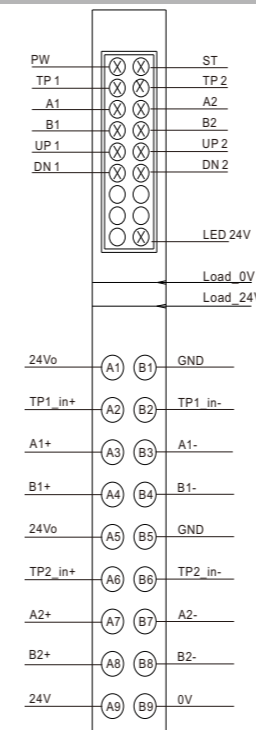
24V Pulse counting module, 2 port, 24V

Specification	
Product	DF50-M-2CNT-PIL-24
Maximum frequency count	1Mhz
Number of channels	2
Data size	20 Byte
Input signal type	Incremental encoder AB or pulse/direction signal 24V DC
Input connection type	2-line
Filtering time	0.01 to 1 ms
Reverse protection	Yes
Isolation method	Isolate from the field layer optocoupler
Fault diagnosis	Yes, us response, error code can be queried by upper computer
Resolution	32 Bit
Precision	±1 pulse
Power Supply Parameters	
Connection type	PUSH-IN type terminal block
System feed current	<100mA
Maximum area of wire	1.5mm ²
Maximum area of wire (AWG)	AWG16
The minimum area of a wire	0.14mm ²
The minimum area of a wire (AWG)	AWG26
Strip length	8..9mm

Product	DF50-M-2CNT-PIL-24
Mechanical Structure	
Protection grade	IP20
Size(H X W X D)	100mm X 12mm X 75mm
Installation type	35mm DIN rail
Work Environment	
Working temperature	-25...60°C
Storage temperature	-40...85°C
Relative humidity	5...95%RH(non-condensing)

LED Status Indicator	
PW	Green: Internal bus power supply is normal
ST	Power on stage: green on: module initialization abnormal, green off: module initialization normal
	Operation phase: Green flashing: The internal bus of the module is working normally, green off: The internal bus of the module is working abnormally
TP1/TP2	On: Input signal valid Off: Input signal invalid
A1/A2	On: Input signal valid Off: Input signal invalid
B1/B2	On: Input signal valid Off: Input signal invalid
UP1/UP2	On: Encoder forward rotation off: Encoder stationary or reverse rotation
DN1/DN2	On: Encoder reverse rotation off: Encoder stationary or forward rotation
LED 24V	On: Module external interface power supply is normal Off: Module external interface power supply is abnormal

Wiring Diagram



PIN definition			
Mark	Description	Mark	Description
A1	24Vo	B1	GND
A2	TP1_in+ signal	B2	TP1_in- signal
A3	A1+ Phase	B3	A1- Phase
A4	B1+ Phase	B4	B1- Phase
A5	24Vo	B5	GND
A6	TP2_in+ signal	B6	TP2_in- signal
A7	A2+ Phase	B7	A2- Phase
A8	B2+ Phase	B8	B2- Phase
A9	Load_24V	B9	Load_0V



DF50-M-1COM-232/485/422

Serial communication module, 1 channel

Specification

Product	DF50-M-1COM-232/485/422
Interface	RS232/RS485/RS422
Number of channels	1
Agreement	Modbus RTU Free protocol transparent mode
BAUD	1200bps - 256000bps
Data bits	7bit / 8bit
Check bit	None / Even / Odd
Stop bit	1bit / 2bit
Maximum data frame length	64byte
Termination resistor	Built in 120 Ohm resistor
Firmware upgrade function	Support

Power Supply Parameters

Connection type	PUSH-IN type terminal block
System feed current	<100mA
Maximum area of wire	1.5mm ²
Maximum wire (AWG)	AWG16
Minimum wire area	0.14mm ²
Minimum wire area (AWG)	AWG26
Strip length	8...10mm

Mechanical Structure

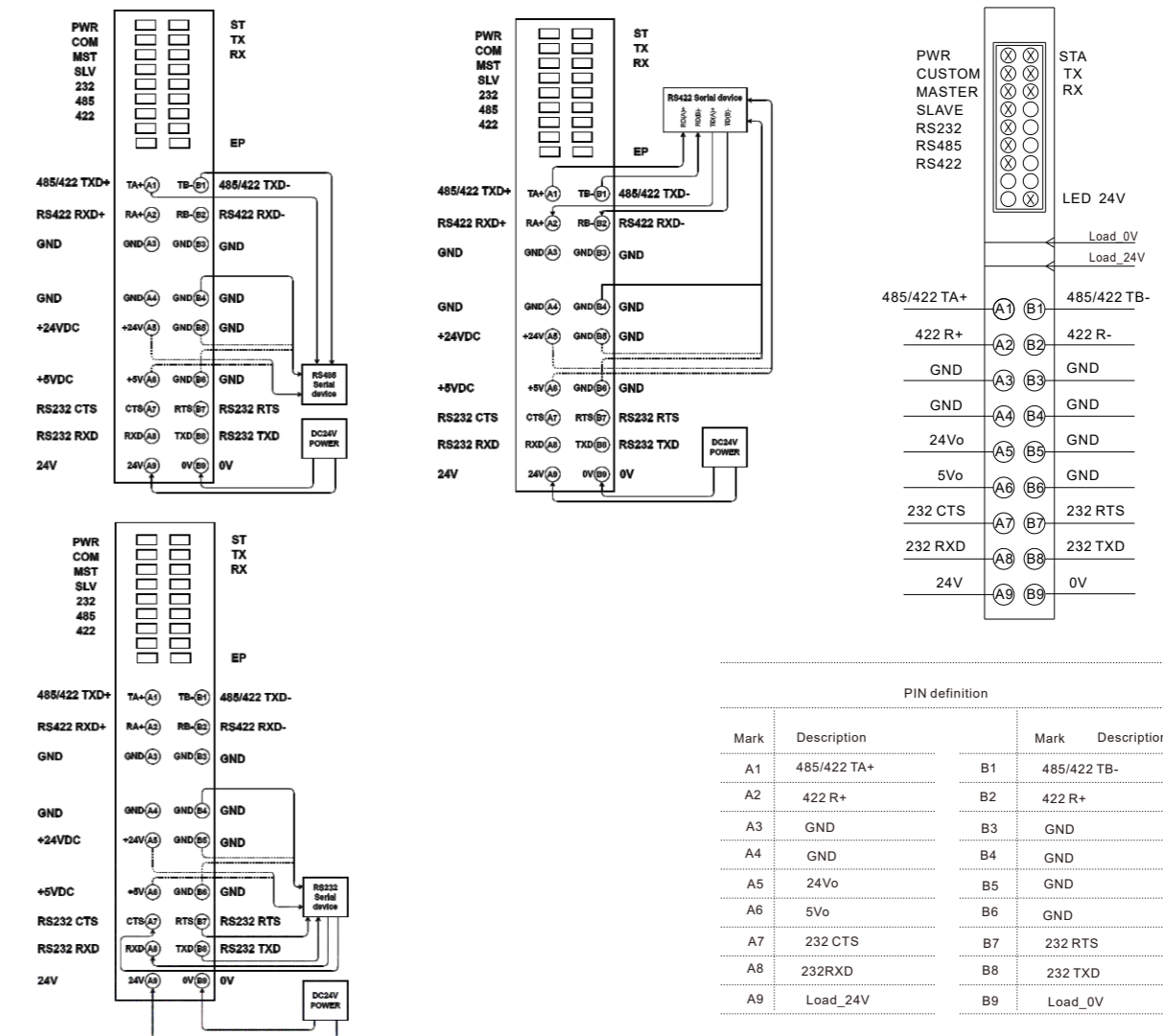
Protection grade	IP20
Size(H X W X D)	111mm X 12mm X 75mm
Installation type	35mm DIN

Work Environment

Working temperature	-25...60°C
Storage temperature	-40...85°C
Relative humidity	5...95%RH(non-condensing)

Product	DF50-M-1COM-232/485/422
LED Status Indicator	
PW	Green: Internal bus power supply is normal
ST	Power on stage: green on: module initialization abnormal, green off: module initialization normal
	Operation phase: Green flashing: The internal bus of the module is working normally, green off: The internal bus of the module is working abnormally
COM	On: Input signal valid Off: Input signal invalid
MST	On: Input signal valid Off: Input signal invalid
SLV	On: Input signal valid Off: Input signal invalid
232	In 232 mode, on: connection normal off: connection abnormal
485	In 485 mode, on: connection normal off: connection abnormal
422	In 422 mode, on: connection normal off: connection abnormal
TS	Flashing: Normal communication transmission Off: Abnormal communication transmission
RX	Flashing: normal communication reception Off: abnormal communication reception
EP	On: External power supply normal Off: External power supply normal

Wiring Diagram





DF50-M-DC-U-0

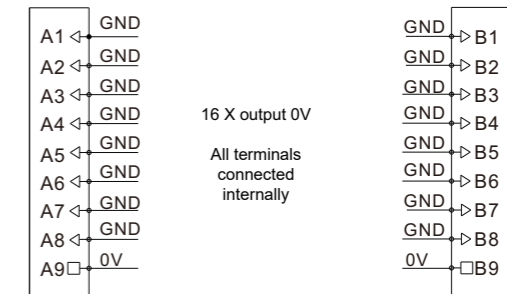
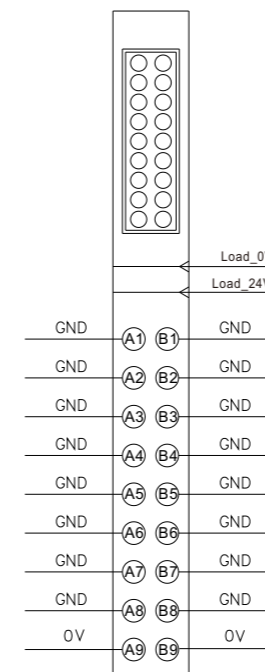
Voltage distribution module, 16 channel 0VDC

Specification

Product	DF50-M-DC-U-0
Number of channels	16
Power Supply Parameters	
Connection type	PUSH-IN type terminal block
System feed current	<100mA
Maximum area of wire	1.5mm ²
Maximum area of wire (AWG)	AWG16
The minimum area of a wire	0.14mm ²
The minimum area of a wire (AWG)	AWG26
Strip length	8...10mm

Product	DF50-M-DC-U-0
Mechanical Structure	
Protection grade	IP20
Size(H X W X D)	111mm X 12mm X 75mm
Installation type	35mm DIN
Work Environment	
Working temperature	-25...60°C
Storage temperature	-40...85°C
Relative humidity	5... 95%RH(non-condensing)

Wiring Diagram



PIN definition

Mark	Description	Mark	Description
A1	output 0V	B1	output 0V
A2	output 0V	B2	output 0V
A3	output 0V	B3	output 0V
A4	output 0V	B4	output 0V
A5	output 0V	B5	output 0V
A6	output 0V	B6	output 0V
A7	output 0V	B7	output 0V
A8	output 0V	B8	output 0V
A9	input 0V	B9	input 0V



DF50-M-DC-U-24

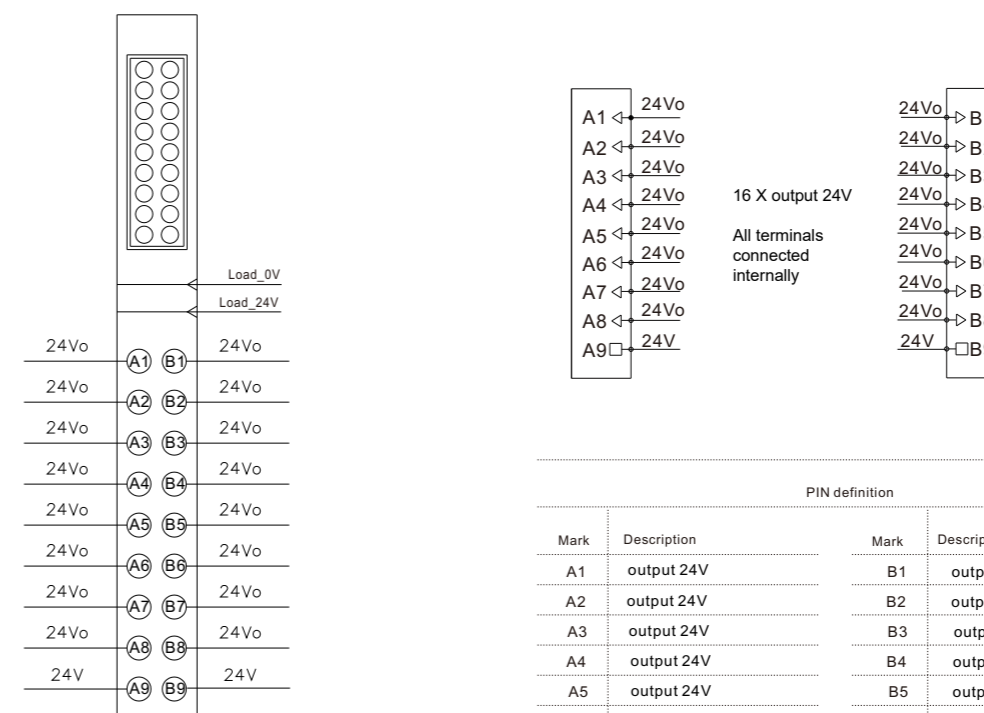
Voltage distribution module, 16 channel 24VDC

Specification

Product	DF50-M-DC-U-24
Number of channels	16
Power Supply Parameters	
Connection type	PUSH-IN type terminal block
System feed current	<100mA
Maximum area of wire	1.5mm ²
Maximum area of wire (AWG)	AWG16
The minimum area of a wire	0.14mm ²
The minimum area of a wire (AWG)	AWG26
Strip length	8...10mm

Product	DF50-M-DC-U-24
Mechanical Structure	
Protection grade	IP20
Size(H X W X D)	111mm X 12mm X 75mm
Installation type	35mm DIN
Work Environment	
Working temperature	-25...60°C
Storage temperature	-40...85°C
Relative humidity	5... 95%RH(non-condensing)

Wiring Diagram



PIN definition			
Mark	Description	Mark	Description
A1	output 24V	B1	output 24V
A2	output 24V	B2	output 24V
A3	output 24V	B3	output 24V
A4	output 24V	B4	output 24V
A5	output 24V	B5	output 24V
A6	output 24V	B6	output 24V
A7	output 24V	B7	output 24V
A8	output 24V	B8	output 24V
A9	input 24V	B9	input 24V