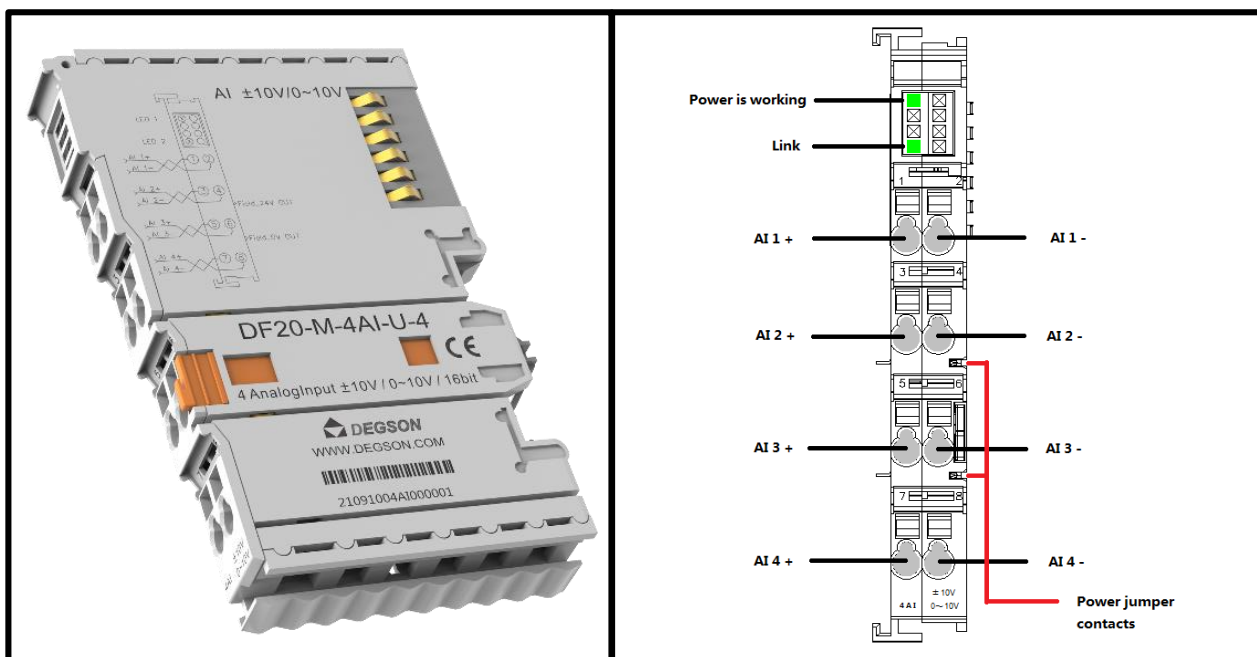


### ◆ 4 channel Analog input /voltage type / $\pm 10V$ ,0~10V(DF20-M-4AI-U-4)

- This analog input module processes standard  $\pm 10V$  ,0~10V signals.
- 4 channel Analog input , voltage type .
- The two LED indicators respectively indicate the normal operation and communication of the module.
- Field and system levels are Magnetic isolated.
- Transmitted with a resolution of 16 bits.
- Protection level IP20.

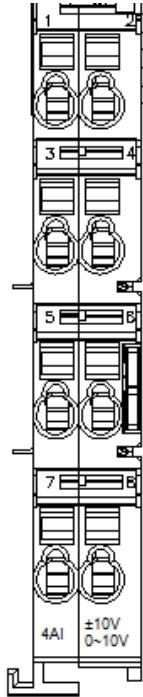


## 1. Specification

<b>Technical data</b>	
Number of channels	4
Signal type	Differential signal
Input signal voltage	24VDC
Connection type	2-line
Resolution [bit]	16 Bit
Precision	0.20%
Data size	8 Byte
Measuring range	voltage ( $\pm 10V/0\sim+10V$ )
Supply voltage (system)	5VDC; via data contacts
Current consumption	<120mA
Working voltage	24VDC (-15%~+20%) via power jumper contacts
Isolation	500Vsystem/field Magnetic isolation
Measuring range (Profinet/Ethernet IP)	(0~+10V) 0~27648 (-10~+10V) -27648~27648
Measuring range(Others)	(0~+10V) -32768~32767 (-10~+10V) -32768~32767
Sampling rate	20~300Hz (Configuration)
Conversion time	1ms
Internal Resistance	>450K $\Omega$
Fault diagnosis	Yes
Reverse protection	Yes
Indicators	2 x LED Green
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
<b>Connection data</b>	
Connection technology: inputs / outputs	8 xvia pluggable connector
Connection type 1	Inputs/Outputs
Area of wire	0.2~2.5mm <sup>2</sup> /28~14AWG
Strip length	8~9mm/0.31~0.35inches
Mounting type	DIN-35 RAIL
<b>Material Data</b>	
Color	light gray
Housing material	Polycarbonate; polyamide 6.6
Conformity marking	CE
<b>Environmental requirements</b>	
Ambient temperature (operation)	-25~60°C
Surrounding air temperature (storage)	-40~85°C
Protection type	IP20
Pollution degree (5)	2, Per IEC 61131-2
Operating altitude	without temperature derating: 0~2000m
Mounting position	Any
Relative humidity (without condensation)	5~95%RH
Vibration resistance	4g, Per IEC 60068-2-6
Shock resistance	15g, Per IEC 60068-2-27
EMC immunity to interference	Per EN 61000-6-2
EMC emission of interference	Per EN 61000-6-3
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible pollutant concentration H2S at a relative humidity < 75%	10ppm
Permissible pollutant concentration SO 2 at a relative humidity < 75%	25ppm

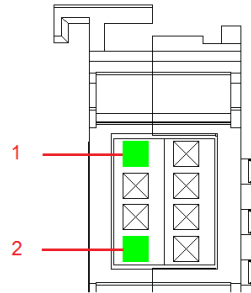
## 2. Hardware Interface

### ● Wiring Terminal



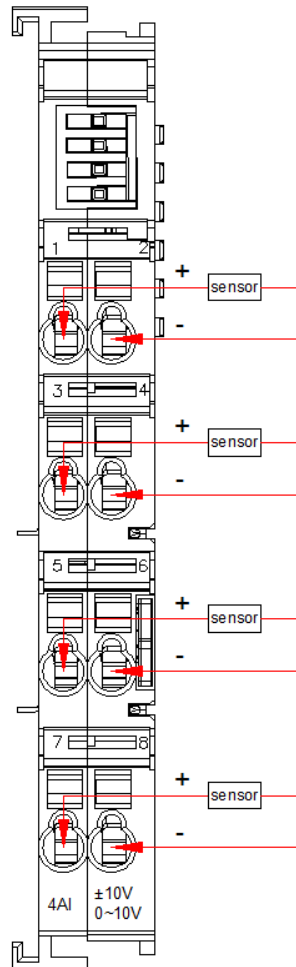
No.	Signal	Description
1	AI 1+	Voltage input channel1
2	AI 1-	
3	AI 2+	Voltage input channel2
4	AI 2-	
5	AI 3+	Voltage input channel3
6	AI 3-	
7	AI 4+	Voltage input channel4
8	AI 4-	

## ● LED Indicator



LED Indicator	State	Definition	
1	Green:ON	Power Normal	
	Green:OFF	Power Failure	
2	Power-on	Green:ON	Module is being initialized
		Green:OFF	Module initialization is complete
	Running	Green: Flash	The module runs normally
		Green:OFF	Module operating fault

## ● Wiring



### 3.Process data definition

#### DF20-M-4AI-U-4 Module process data definition

Input data									
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Data type
Byte 0	Analog Input Data(Channel 1)								Int16
Byte 1									
Byte 2	Analog Input Data(Channel 2)								Int16
Byte 3									
Byte 4	Analog Input Data(Channel 3)								Int16
Byte 5									
Byte 6	Analog Input Data(Channel 4)								Int16
Byte 7									

#### Data description:

Analog Input Data(Channel 1~4): Analog signal Input value of corresponding channel.

Analog Input Data (DF20-M-4AI-U-4)								
(Profinet/Ethernet IP)				Other				
(-10V~10V)	Decimal	(0V~10V)	Decimal	(-10V~10V)	Decimal	(0V~10V)	Decimal	
>10.12	32767	>10.12	32767	/	/	/	/	Overflow
10.12	27979	10.12	27979	/	/	/	/	Exceed the upper limit
...	...	...	...					
...	...	...	...					
10+0.3617	27649	10+0.3617	27649					
10	27648	10	27648	10	32767	10	32767	Rated range
...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	
-10	-27648	0	0	-10	-32768	0	0	
-10-0.3617	-27649	/	/	/	/	/	/	Exceed the lower limit
...	...							
...	...							
-10.12	-27979							
<-10.12	-32768	/	/	/	/	/	/	Underflow

## 4.Machinery installation

### ● Dimension drawing

The installation size is shown in the following figure (unit: mm):

