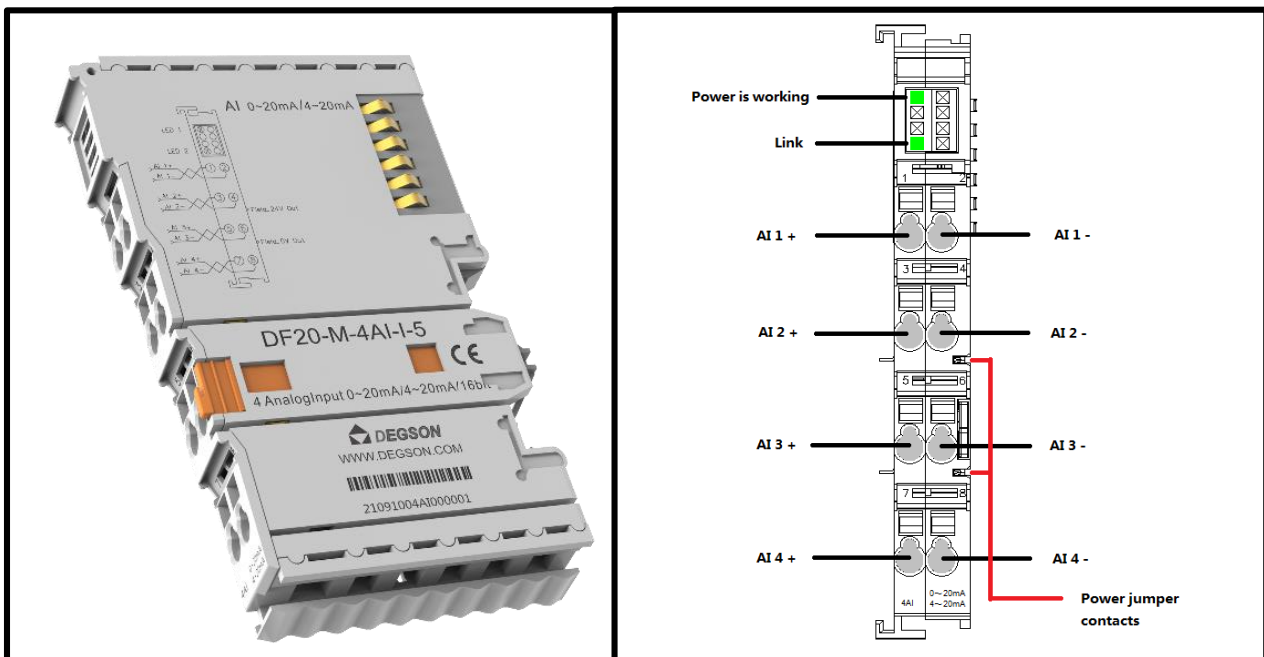


◆ 4 channel Analog input /current type /0~20mA ,4~20mA (DF20-M-4AI-I-5)

- This analog input module processes standard 0~20mA ,4~20mA signals.
- 4 channel Analog input , current 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.

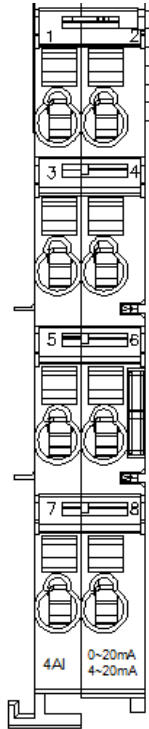


1. Specification

| Technical data | |
|-----------------------------------------------------------------------------------|---------------------------------------------|
| Number of channels | 4 |
| Signal type | Differential signal |
| Input signal voltage | 24VDC |
| Connection type | 2-line |
| Resolution [bit] | 16 Bit |
| Precision | 0.20%/±50ppm/K max. |
| Data size | 8 Byte |
| Measuring range | current (0~20mA/4~20mA) |
| 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) | (0~20mA/4~20mA) 0~27648 |
| Measuring range(Others) | (0~20mA/4~20mA) 0~65535 |
| Sampling rate | 20~300Hz (Configuration) |
| Conversion time | <1ms |
| Internal Resistance | 100Ω |
| 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 |
| Connection data | |
| Connection technology: inputs / outputs | 8 xvia pluggable connector |
| Connection type 1 | Inputs/Outputs |
| Area of wire | 0.2~2.5mm ² /28~14AWG |
| Strip length | 8~9mm/0.31~0.35inches |
| Mounting type | DIN-35 RAIL |
| Material Data | |
| Color | light gray |
| Housing material | Polycarbonate; polyamide 6.6 |
| Conformity marking | CE |
| Environmental requirements | |
| 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 H ₂ S at a relative humidity < 75% | 10ppm |
| Permissible pollutant concentration SO ₂ at a relative humidity < 75% | 25ppm |

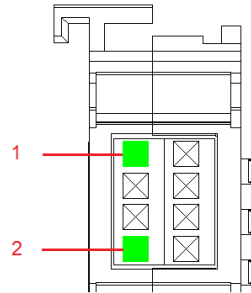
2. Hardware Interface

● Wiring Terminal



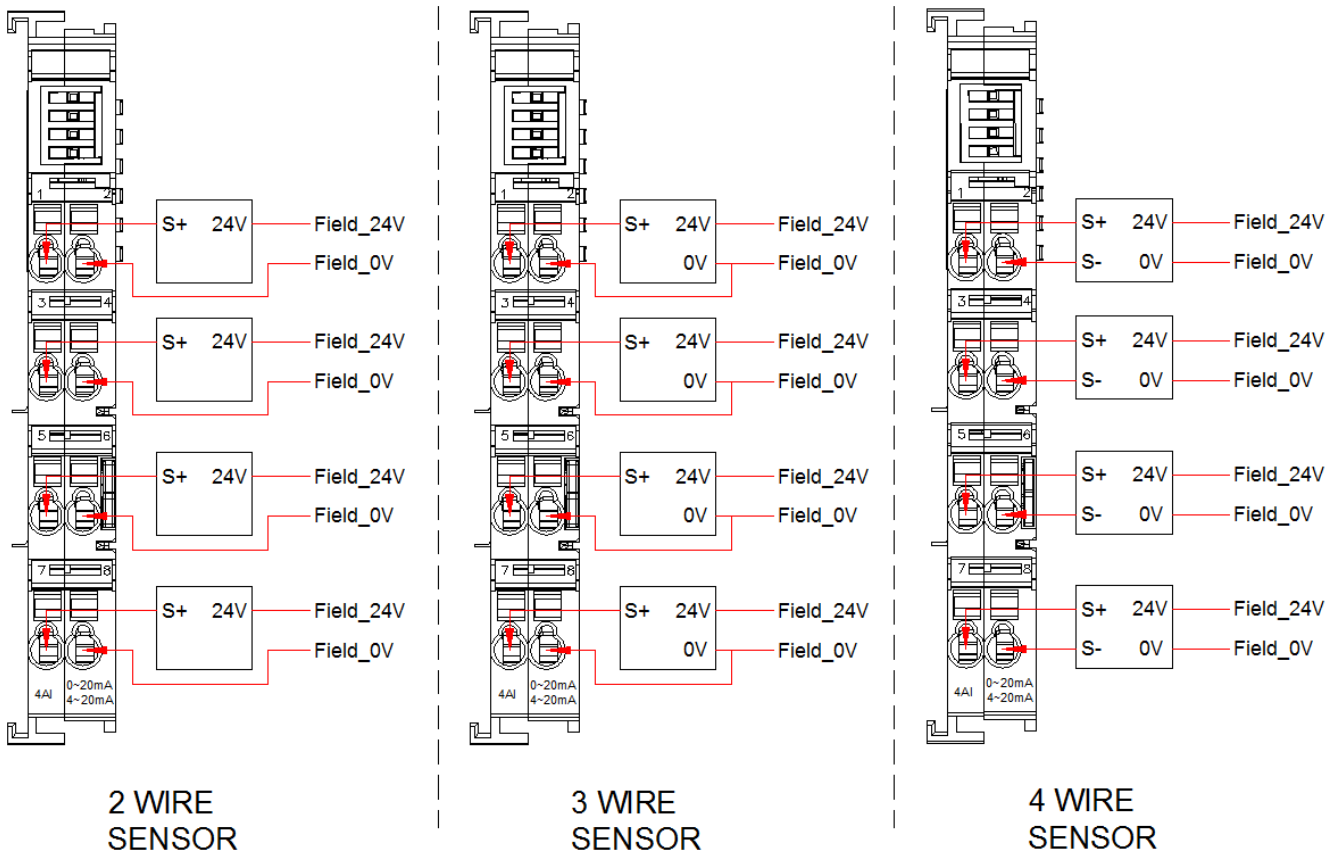
| No. | Signal | Description |
|-----|--------|------------------------|
| 1 | AI 1+ | Current input channel1 |
| 2 | AI 1- | |
| 3 | AI 2+ | Current input channel2 |
| 4 | AI 2- | |
| 5 | AI 3+ | Current input channel3 |
| 6 | AI 3- | |
| 7 | AI 4+ | Current input channel4 |
| 8 | AI 4- | |

● 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-I-5 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) | | | | | | | | Uint16 |
| Byte 1 | | | | | | | | | |
| Byte 2 | Analog Input Data(Channel 2) | | | | | | | | Uint16 |
| Byte 3 | | | | | | | | | |
| Byte 4 | Analog Input Data(Channel 3) | | | | | | | | Uint16 |
| Byte 5 | | | | | | | | | |
| Byte 6 | Analog Input Data(Channel 4) | | | | | | | | Uint16 |
| Byte 7 | | | | | | | | | |

Data description:

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

| Analog Input Data (DF20-M-4AI-I-5) | | | | | | |
|------------------------------------|----------|---------|----------|----------|---------|------------------------|
| (Profinet/Ethernet IP) | | | Other | | | |
| (0~20mA) | (4~20mA) | Decimal | (0~20mA) | (4~20mA) | Decimal | |
| >23.515 | >22.810 | 32767 | / | / | / | Overflow |
| 23.515 | 22.81 | 32511 | / | / | / | Exceed the upper limit |
| ... | ... | ... | | | | |
| ... | ... | ... | | | | |
| 20.0007 | 20.0005 | 27649 | | | | |
| 20 | 20 | 27648 | 20 | 20 | 65535 | Rated range |
| ... | ... | ... | ... | ... | ... | |
| ... | ... | ... | ... | ... | ... | |
| 0 | 4 | 0 | 0 | 4 | 0 | |
| <0.0 | 3.9995 | -1 | / | / | / | Exceed the lower limit |
| ... | ... | ... | | | | |
| ... | ... | ... | | | | |
| ... | 1.1852 | -4864 | | | | |
| / | <1.1852 | -32768 | / | / | / | Underflow |

4. Machinery installation

● Dimension drawing

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

