3.1 16 channel digital input /24VDC/PNP&NPN(DF50-M-16DI-P/N)

- The digital input module can receive control signals from on-site devices (such as sensors).
- 16 channel digital input, PNP&NPN effective, converted using common terminals.
- Each input module is equipped with an anti-interference filter.
- Each input module is equipped with LED indicator lights.
- Isolation between the on-site layer and the system layer is achieved through optocouplers.
- Protection level IP20.

3.1.1 Specification parameters

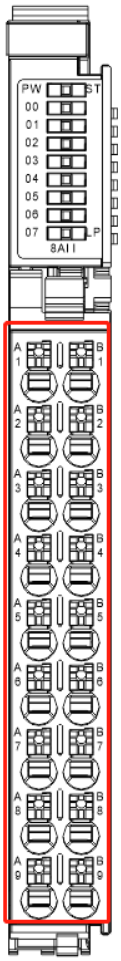
Technical Information	
Description	Digital input module, 16 inputs, NPN+PNP, 24VDC
Number of channels	16
Signal type	NPN & PNP

"ON" signal voltage	＞11V DC
"OFF" signal voltage	＜5V DC
Hardware response time	200us/200us
Data size	2 Byte
Type of connection	1-wire, Type 1/Type 3 , Refer to IEC 61131-2
Reverse circuit protection	Yes
Isolation method	Optoelectronic isolation from the on-site layer
Error diagnosis	Yes
Signal (0) Input current of each channel (typical)	0.6mA
Signal (1) Input current of each channel (typical)	2.3mA
Signal (1) Minimum input current for each channel	2.1mA
Signal (1) Maximum input current of each channel	2.4mA
Filtering time	0.2-40ms configurable
Impedance	>7.5kΩ
Input action display	When the input is in the drive state, the input indicator light is on
IO mapping	Supports bitwise access, byte access, and two IO mapping methods
Working voltage	24V DC +20 %/ -15 %
System feed current	<30ma
Wiring parameters	
Connection technology: Input end	PUSH-IN type wiring port
line type	Input
Crimping area of wire	0.14～1.5mm²/26～16AWG
Strip length	8～10mm
Installation method	DIN-35 type guide rail
Material parameters	
Colour	Black
Housing material	PC plastic,PA66
Consistency flag	CE
Environmental requirements	
Permissible ambient temperature (during operation)	-25～60℃
Permissible ambient temperature(storage)	-40～85℃
Protection type	IP20
Pollution leve	2.Comply with IEC 61131-2 standard
Working altitude	Without temperature influence:0～2000m
Relative humidity (non condensing)	5～95%RH
Anti vibration	4g, Complies with IEC 60068-2-6 standard
Impact resistance	15g,Complies with IEC 60068-2-27 standard
EMC - Immunity	Complies with EN 61000-6-2 standard
EMC-Radiated Interference	Complies with EN 61000-6-3 standard
Corrosion resistance	Complies with IEC 60068-2-42 and IEC 60068-2-43 standards

Permissible H2S pollutant concentration at 75% relative humidity	10ppm
Permissible SO2 pollutant concentration at 75% relative humidity	25ppm

3.1.2 Hardware interface

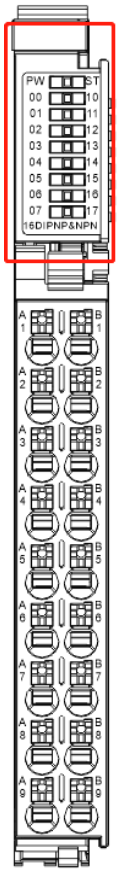
3.1.2.1 Definition of wiring port



Serial Number	Signal	explanatory note	Serial Number	Signal	explanatory note
A1	DI 0	IO signal input	B1	DI 10	IO signal input
A2	DI 1		B2	DI 11	
A3	DI 2		B3	DI 12	
A4	DI 3		B4	DI 13	
A5	DI 4		B5	DI 14	
A6	DI 5		B6	DI 15	
A7	DI 6		B7	DI 16	
A8	DI 7		B8	DI 17	
A9	COM	Common terminal	B9	COM	Common terminal

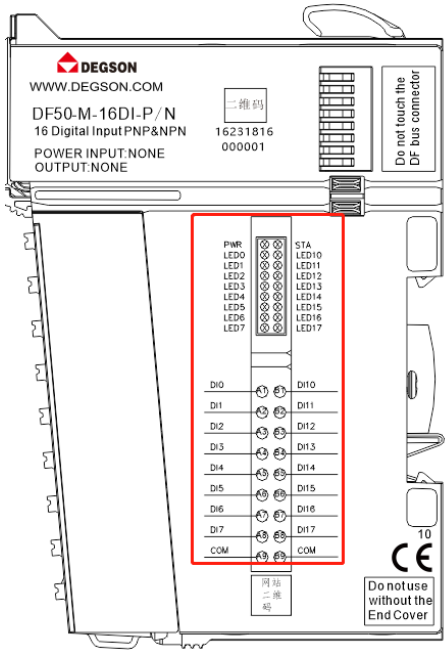
。

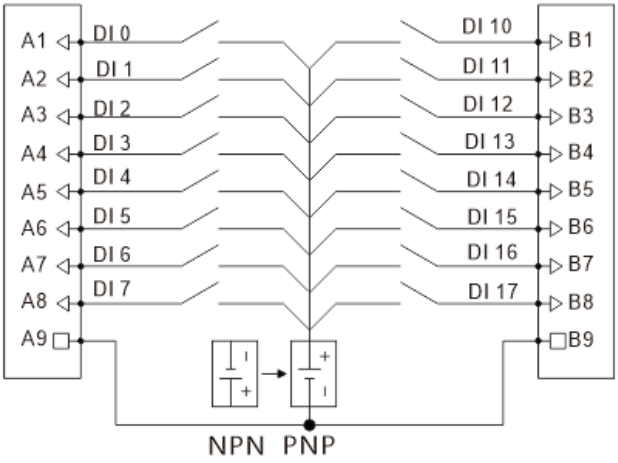
3.1.2.2 Definition of LED indicator lights



Pilot lamp	Explanatory note
00～07,10～17	Green light on: input signal is high
	Green light off: Low input signal
PW	Green light on: Internal bus power supply is normal
	Green light off: Abnormal internal bus power supply
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

3.1.2.3 Wiring diagram





Note: COM is a public terminal, and external 24V is used to achieve NPN. External 0V to achieve PNP.

3.1.3 Process Data Definition

DF50-M-16DI-P/N module process data definition

Data in								
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	DI Channel 7	DI Channel 6	DI Channel 5	DI Channel 4	DI Channel 3	DI Channel 2	DI Channel 1	DI Channel 0
Byte 1	DI Channel 17	DI Channel 16	DI Channel 15	DI Channel 14	DI Channel 13	DI Channel 12	DI Channel 11	DI Channel 10

Data description:

DI Channel (00-07, 10-17: When the corresponding channel input signal is high, this position is 1, and if it is high, it is 0)

Input signal valid 0: Input signal invalid

3.1.4 Mechanical Installation

Installation dimensions

The installation size information is shown in the following figure.