

3.3 16 channel digital output /24VDC/NPN (DF50-M-16DO-N)

- The digital output module can transmit binary signals from automation equipment to the connected actuators (solenoid valves, etc.).
- 16 channel digital output, PNP high level effective.
- Each output module is equipped with an anti-interference filter.
- Each output module is equipped with LED indicator lights.
- Isolation between the on-site layer and the system layer is achieved through optocouplers.
- Protection level IP20.



3.3.1 Specification parameters

Technical Information	
Description	Digital output module, 16 outputs, PNP, 24VDC
Number of signal channels	16

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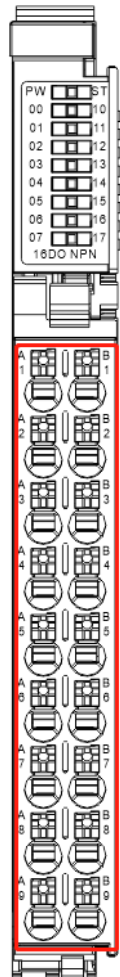
Signal type	NPN
"ON" signal voltage	High resistance state
"OFF" signal voltage	24V DC
Data size	2 Byte
Line type	1-wire
Reverse circuit protection	Yes
Overcurrent protection	Yes
Short circuit protection	Yes
Isolation method	Optoelectronic isolation from the on-site layer
Error diagnosis	Yes
Switching frequency (resistive)	100Hz
Switching frequency (lamp)	10Hz
Switching frequency (inductive)	0.2Hz
Response time of protection circuit	< 100 μs
Maximum current output per channel	500 mA
Leakage current	Max: 10uA
Hardware response time	100us/100us
Output impedance	<200mΩ
Output delay	OFF to ON :Max.100us , ON to OFF :Max.150us
Protection function	Over temperature shutdown: typical value 135 °C Overcurrent protection: 1.1A. Typical value 0.5A Support short circuit protection
Load type	Inductive (7.2W/point, 24W/module), resistive (0.5A/point, 4A/module), electric light (5W/point, 18W/module)
Output action display	When the output is in the drive state, the indicator light is on
Input Derating	Derate by 50% when operating at 55 °C (while the output current of ON does not exceed 2A), or by 10 °C when all output points are ON
IO mapping	Supports three IO mapping methods: bit access, byte access, and word access
Fault shutdown output status mode	Clear to zero and maintain the current value
In shutdown mode	Press the fault shutdown mode and no longer refresh
Working voltage	24V DC +20 %/ -15 %
System feed current	<75mA
Wiring parameters	
Connection technology: output end	PUSH-IN type wiring port
line type	Output
Crimping area of wire	0.14~1.5mm ² /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°C
Permissible ambient temperature (storage)	-40~85°C
Protection type	IP20
Pollution leve	2. Comply with IEC 61131-2 standard

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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

3.3.2 Hardware interface

3.3.2.1 Definition of wiring port

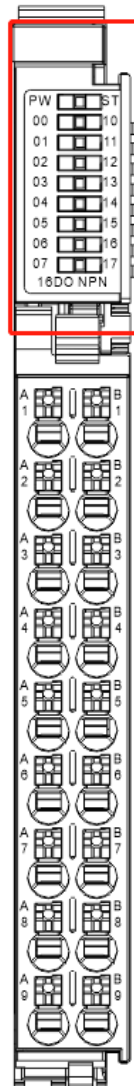


Serial Number	Signal	explanatory note	Serial Number	Signal	explanatory note
A1	DO 0	Low level output	B1	DO 10	Low level output
A2	DO 1		B2	DO 11	
A3	DO 2		B3	DO 12	
A4	DO 3		B4	DO 13	

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A5	DO 4		B5	DO 14	
A6	DO 5		B6	DO 15	
A7	DO 6		B7	DO 16	
A8	DO 7		B8	DO 17	
A9	24V	External 24V terminal	B9	0V	External 0V terminal

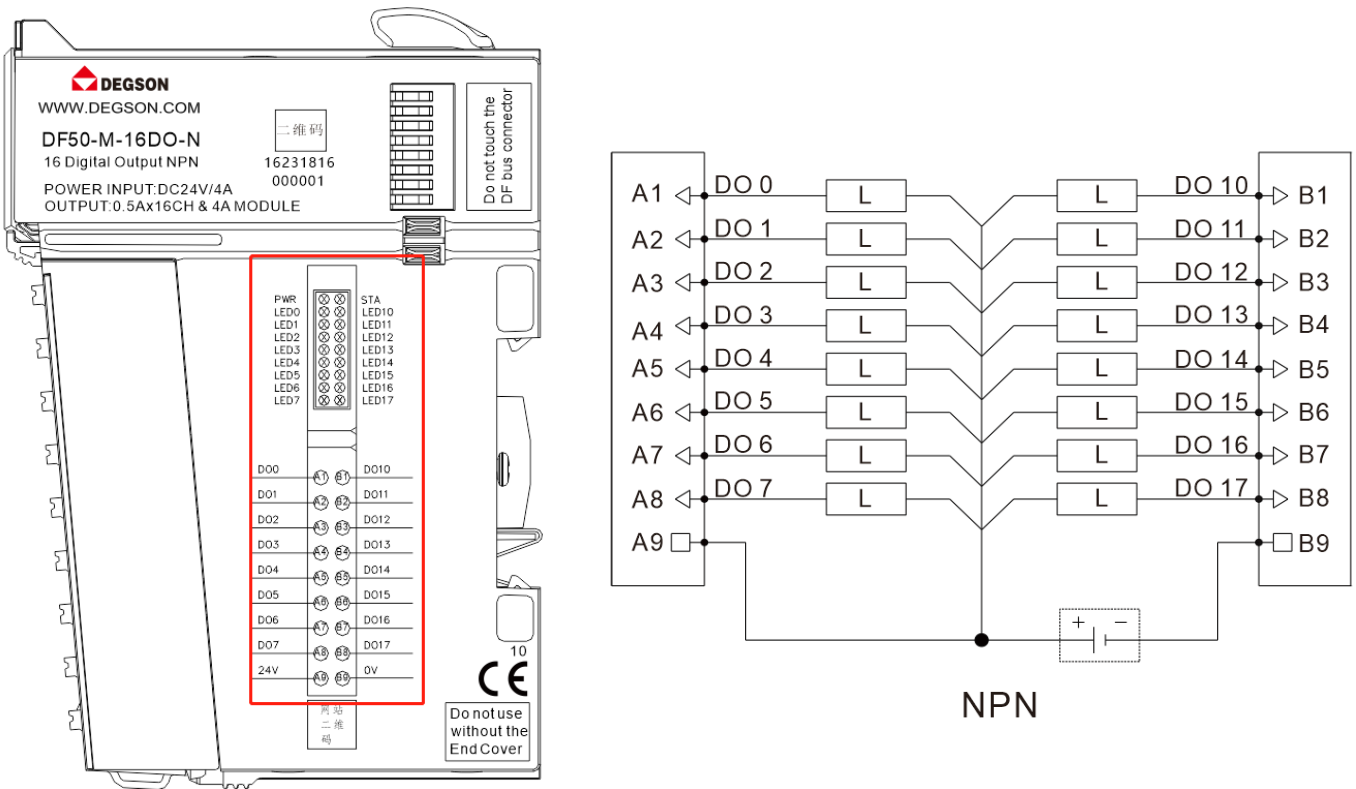
3.3.2.2 Definition of LED indicator lights



Pilot lamp	Explanatory note
00~07, 10~17	Green light on: output signal is normal
	Green light off: abnormal output 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

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3.3.2.3 Wiring diagram



Note: A9 and B9 24V power supplies are provided externally.

3.3.3 Process Data Definition

DF50-M-16DO-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	DO Channel 7	DO Channel 6	DO Channel 5	DO Channel 4	DO Channel 3	DO Channel 2	DO Channel 1	DO Channel 0
Byte 1	DO Channel 17	DO Channel 16	DO Channel 15	DO Channel 14	DO Channel 13	DO Channel 12	DO Channel 11	DO Channel 10

Data description:

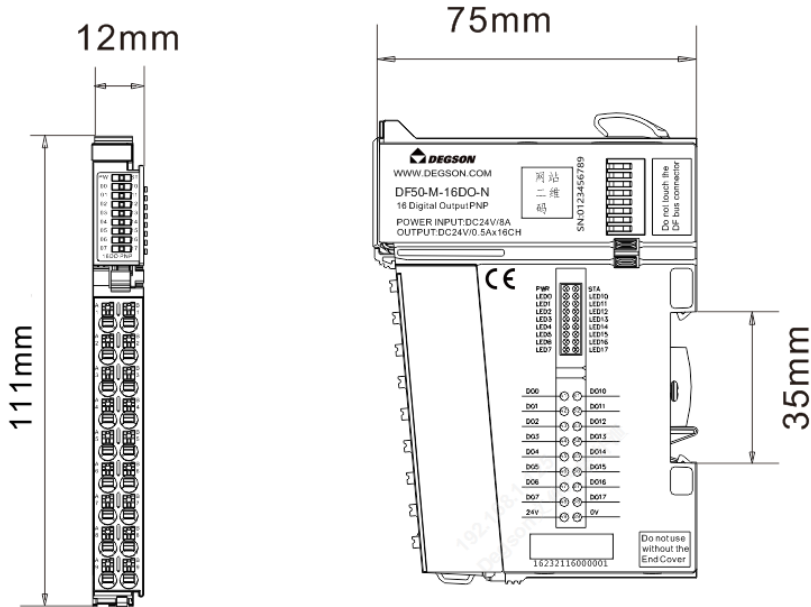
DO Channel (00-07, 0-17): When the corresponding channel output signal is valid, this position is 1, and the output level is low. If it is invalid, it is 0.

1: Output signal valid 0: Output signal invalid:

3.3.4 Mechanical Installation

Installation dimensions

The installation size information is shown in the following figure.



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