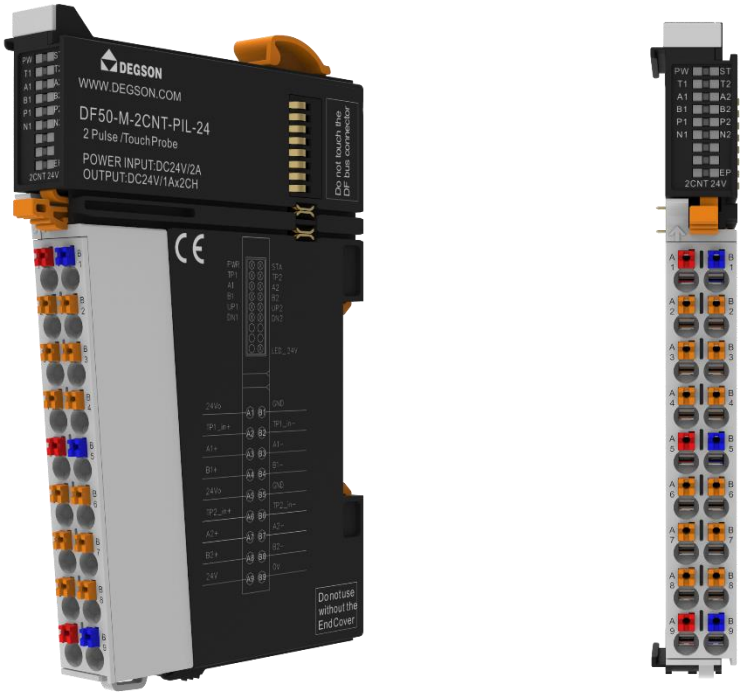
3.12 Encoder pulse count/24VDC (DF50-M-2CNT-PIL-24)

- The pulse counting module adopts 2-channel pulse counting. The input signal voltage is 24VDC.
- Each input module is equipped with an anti-interference filter.
- Two LED indicators indicate that the module is operating normally and communication is normal.
- Magnetic isolation between the on-site layer and the system layer.
- Protection level IP20.



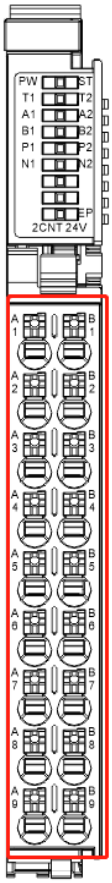
3.12.1 Specification parameters

Technical Information	
Product Description	Pulse counting module, 2 channels
Number of channels	2
Maximum count frequency	1Mhz

Input signal type	Incremental encoder AB or pulse/direction signal
Input signal voltage	24V DC
Enter Connection Type	4-wire system/2-wire system
Reverse circuit protection	Yes
Isolation method	Isolation from on-site layer optocoupler
data size	20 Byte
Frequency doubling mode	X1/x2/x4
Filtering time	Configurable
Short circuit protection	have
Sensor power supply	1A@24V
Error diagnosis	Yes, US responded, error code can be queried by the upper computer
resolving power	32 Bit
measuring range	Encoder: -2147483648~2147483647
Error range	± 1 pulse
System feed current	<100mA
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

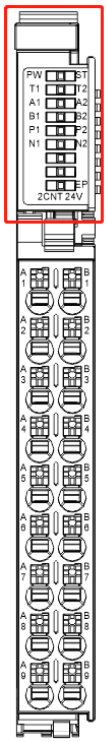
3.12.2 Hardware interface

3.12.2.1 Definition of wiring port



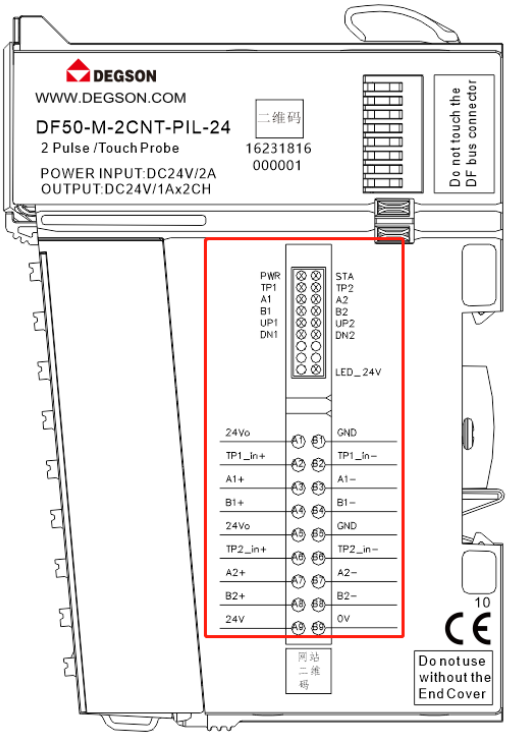
Serial Number	Signal	Serial Number	Signal	Explanatory note
A1	24Vo	B2	GND	Load power supply
A2	TP1_in+	B3	TP1_in-	Pulse signal interface
A3	A1+	B4	A1-	24V input orthogonal encoder
A4	B1+	B5	B1-	
A5	24Vo	B6	GND	Load power supply
A6	TP2_in+	B7	TP2_in-	Pulse signal interface
A7	A2+	B8	A2-	24V input orthogonal encoder
A8	B2+	B9	B2-	
A9	24V	B2	0V	24V input power supply

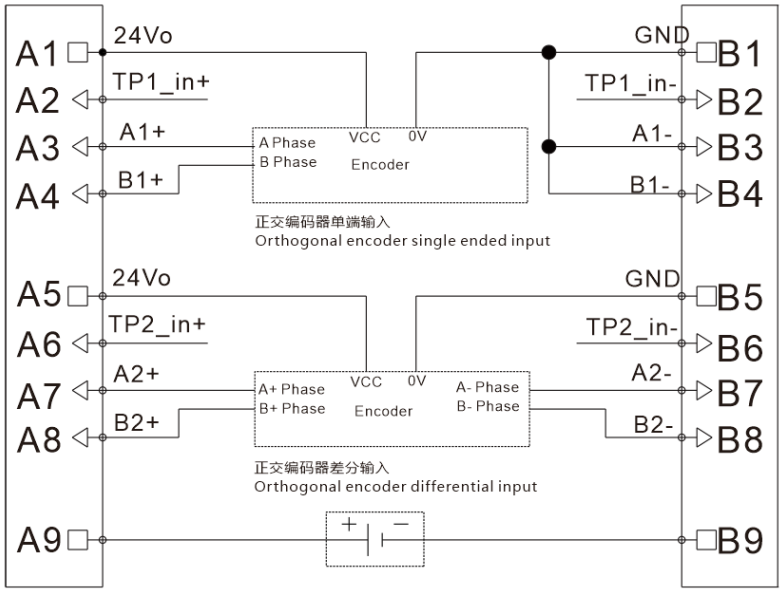
3.12.2.2 Definition of LED indicator lights

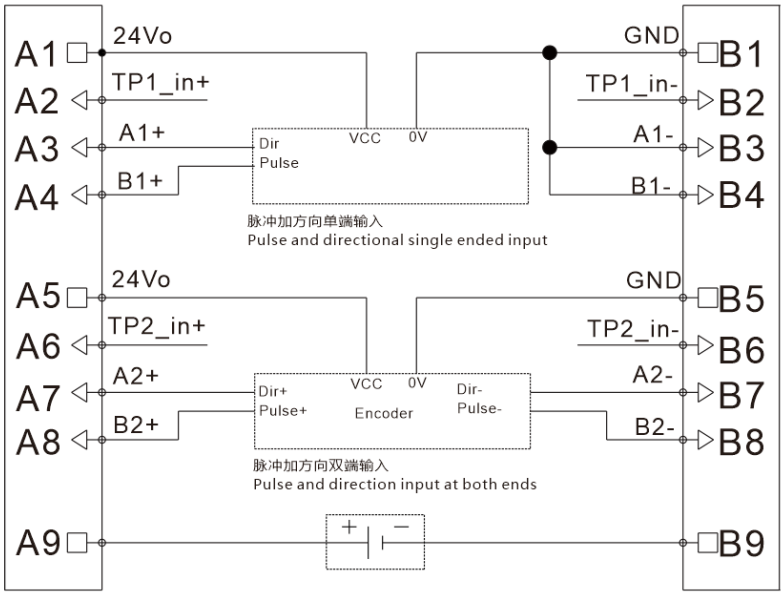


LED indicator light	Explanatory note
PW	Internal bus power supply is normal
	Abnormal internal bus power supply
ST	Power on stage: green light on: module initialization abnormal, green light off: module initialization normal
	Operation phase: green light flashing: module internal bus working normally, green light off: module internal bus working abnormally
T1/T2	On: The input signal is valid
	Off: Invalid input signal
A1/A2	On: The input signal is valid
	Off: Invalid input signal
B1/B2	On: The input signal is valid
	Off: Invalid input signal
P1/P2	On: encoder rotates forward
	Off: Encoder stationary or reverse rotation
N1/N2	On: encoder rotates in reverse
	Off: Encoder stationary or forward rotation
EP	On: The power supply to the external interface of the module is normal
	Off: Abnormal power supply to the external interface of the module

3.12.2.3 Wiring diagram







Note: A9 and B9 are external power input interfaces

As shown in the figure:

Encoder pulse count/24VDC
(DF50-M-2CNT-PIL-24)

Orthogonal encoder input A+/A - corresponds to A3, B3, A4, B4 pins with B+/B -; The electronic probe input corresponds to A2 and B2 pins, and this module supports PNP/NPN type switch input, where A2 pin is internally connected to 24V and B2 pin is externally connected to low effective signal; B2 pin is internally connected to 0V, and A2 pin is externally connected to a high effective signal; The A9 and B9 pins are connected to an external input 24V power supply.

Orthogonal encoder inputs A and B correspond to A3 and A4 pins; B3 and B4 pins are connected to sensor 0V; The electronic probe input corresponds to A2 and B2 pins, and this module supports PNP/NPN type switch input, where A2 pin is internally connected to 24V and B2 pin is externally connected to low effective signal; B2 pin is internally connected to 0V, and A2 pin is externally connected to a high effective signal; The A9 and B9 pins are connected to an external input 24V power supply.

3.12.3 Mechanical Installation

output data									
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	data type
Byte 0	command data								Uint16
Byte 1									
input data									
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	data type
Byte 0	state data								Uint16
Byte 1									
Byte 2	Encoder data high 16 bits								Int32
Byte 3									
Byte 4	Encoder data low 16 bits								
Byte 5									
Byte 6	Electron probe latch high 16 bits								Int32
Byte 7									
Byte 8	Electron probe latch low 16 bits								
Byte 9									

Meaning of output data

Byte 0	0x012B: Sampling command
Byte 1	0x012C: Sampling Data Zeroing Command Sampling Data Zeroing Command

Meaning of input data

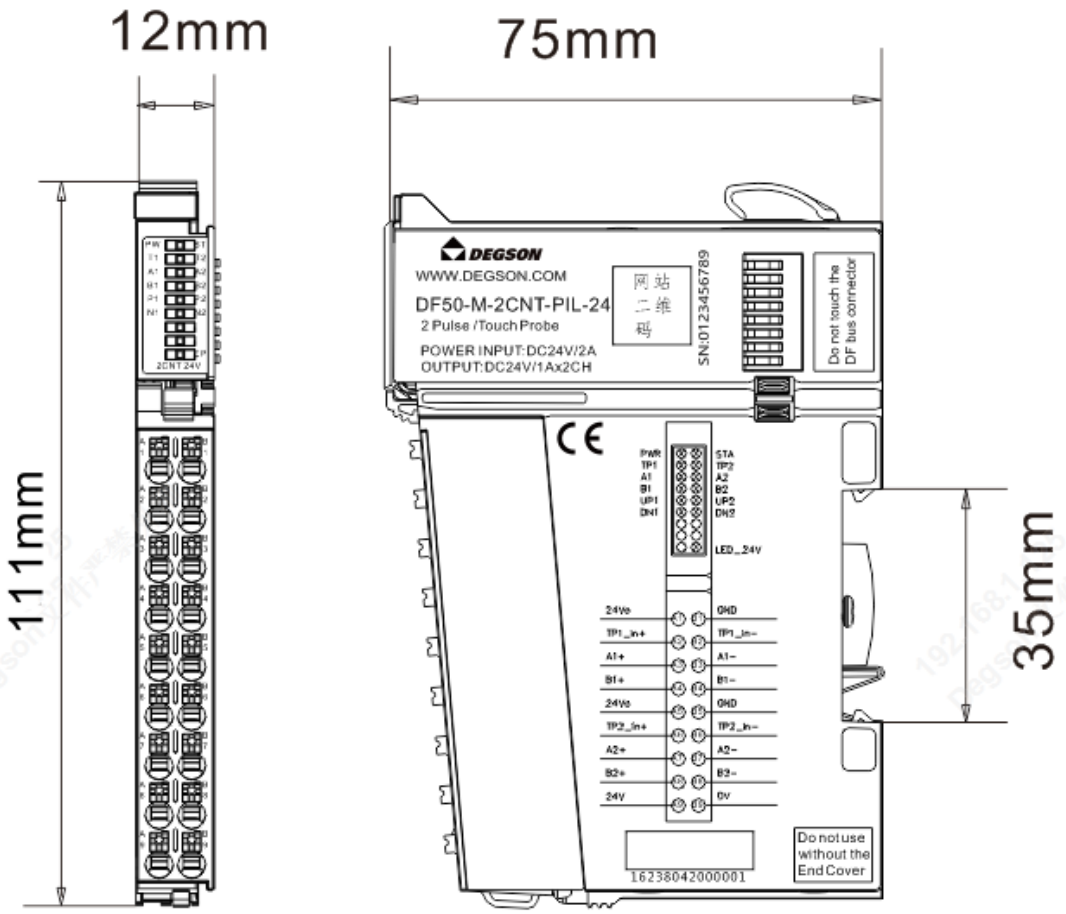
Byte 0	0x010B: Sampling status
Byte 1	0x010C: Data zeroing completion status 0x010E: Error Status

	0x0109：Idle state
Byte 2	Data range:-2147483648~2147483647
Byte 3	
Byte 4	
Byte 5	
Byte 6	Data range:-2147483648~2147483647
Byte 7	
Byte 8	
Byte 9	

3.12.4 Mechanical Installation

Installation dimensions

The installation size information is shown in the following figure.


12mm
75mm
111mm
35mm
DEGSON
WWW.DEGSON.COM
DF50-M-2CNT-PIL-24
2 Pulse /Touch Probe
POWER INPUT:DC24V/2A
OUTPUT:DC24V/1Ax2CH
SN:0123456789
Do not touch the DF bus connector
PWR
TP1
A1
B1
UP1
DN1
STA
TP2
A2
B2
UP2
DN2
LED_24V
24Vo
TP1_in+
A1+
B1+
24Vo
TP2_in+
A2+
B2+
24V
GND
TP1_in-
A1-
B1-
GND
TP2_in-
A2-
B2-
0V
16238042000001
Do not use without the End Cover

Encoder pulse count/24VDC
(DF50-M-2CNT-PIL-24)