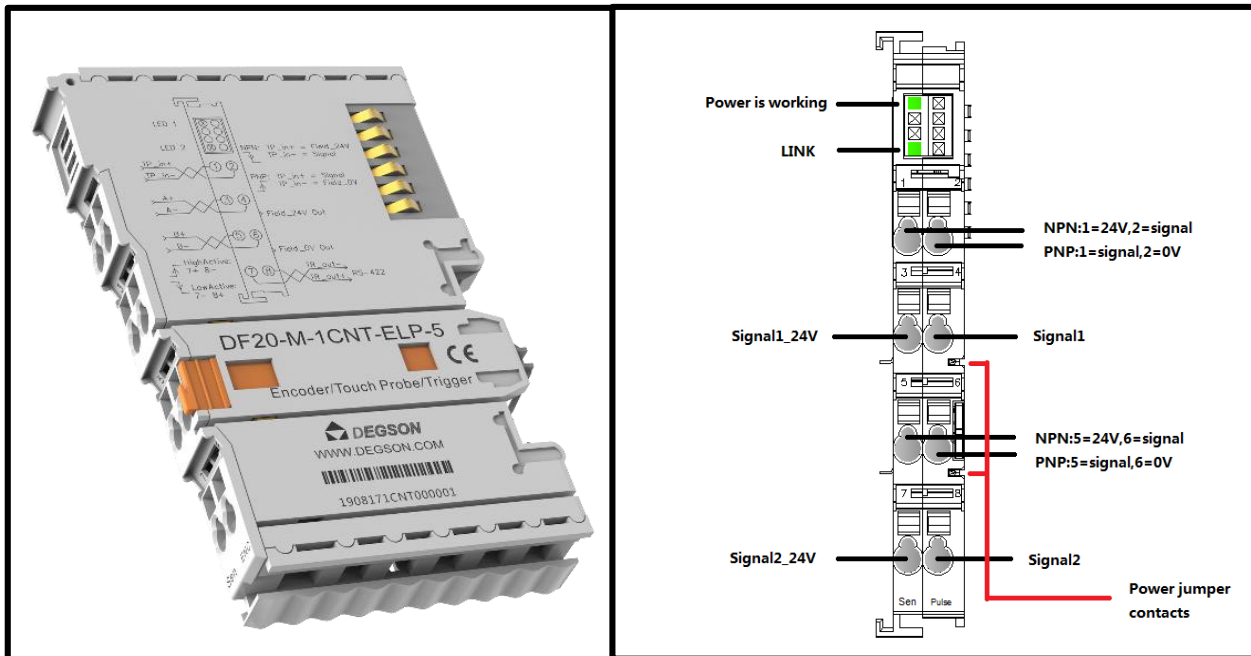


## ◆ 2 channel pluse count /5VDC(DF20-M-2CNT-PIL-5)

- The module supports two channel of pluse count ,Input signal voltage 5VDC.
- Each input module has a noise-rejection filter.
- The two LED indicators respectively indicate the normal operation and communication of the module.
- Field and system levels are Magnetic isolated.
- Protection level IP20.

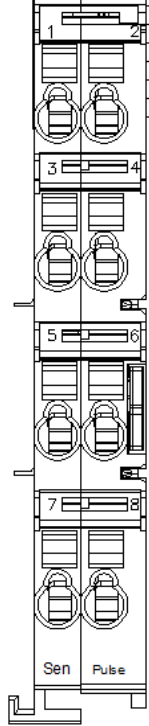


## 1. Specification

<b>Technical data</b>	
Number of channels	2
Maximum frequency count	1Mhz
Input signal type	Pulse signal
Input signal voltage	5VDC
Input connection type	2-line
Resolution [bit]	32 Bit
Precision	± 1 pulse
Data size	28 Byte
Supply voltage (system)	5VDC; via data contacts
Current consumption	<30mA
Working voltage	24VDC (-15%~+20%) via power jumper contacts
Isolation	500Vsystem/field Magnetic isolation
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 x via 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 H <sub>2</sub> S at a relative humidity < 75%	10ppm
Permissible pollutant concentration SO <sub>2</sub> at a relative humidity < 75%	25ppm

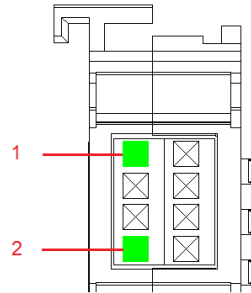
## 2. Hardware Interface

### ● Wiring Terminal



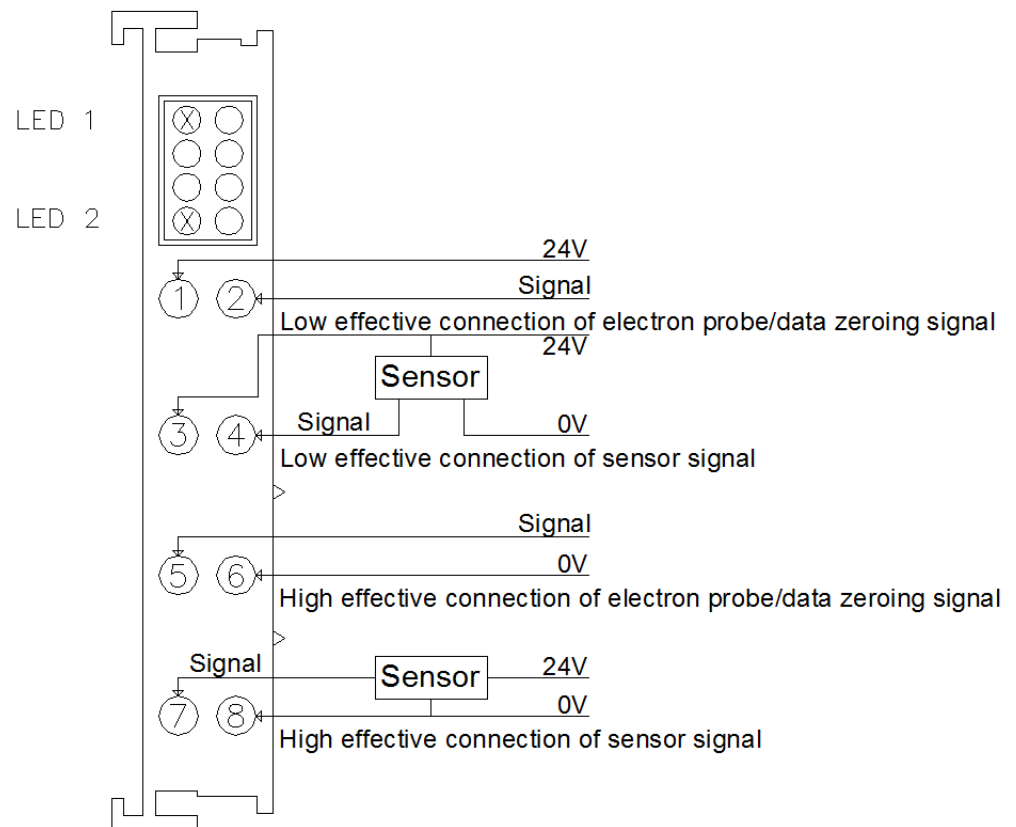
No.	Signal	Description
1	24V	NPN: No.1 connect 24V, No.2 connect low effective signal PNP: No.1 connect high effective signal, No.2 connect 0V
2	0V	
3	Signal 1 24V	CH 1 pluse input
4	Signal 1	
5	24V	NPN: No.1 connect 24V, No.2 connect low effective signal PNP: No.1 connect high effective signal, No.2 connect 0V
6	0V	
7	Signal 2 24V	CH 2 pulse input
8	Signal 2	

## ● 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



As shown in the picture:

(1) Pin 1 and pin 2 are the input of the first channel electron probe/the first channel data zeroclearing signal. The specific function can be configured according to the requirements;

(2) Pin 3 and pin 4 are the first pulse input channel, as shown in the figure, low effective connection of sensor signal;

(3) Pin 5 and pin 6 are the input of the second channel electron probe/the second channel data zeroclearing signal. Usage is consistent with the input of the first channel electron probe/first channel data zeroing signal ;

(4) Pin 7 and pin 8 are the second pulse input channel, as shown in the figure, high effective connection of sensor signal;

Note :

(1) When the module NPN type switch input, pin 1 is connected with 24V inside, pin 2 is connected with low effective signal outside;

(2) When the module PNP type switch input, pin 1 is connected with high effective signal outside, pin 2 is connected with 0V inside.

### 3.Process data definition

#### DF20-M-2CNT-PIL-5 Module process data definition

Output data									
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Data type
Byte 0	CH 1 command output data								Uint 8
Byte 1	CH 1 pulse comparison value output								Uint 32
Byte 2									
Byte 3									
Byte 4									
Byte 5	CH 2 command output data								Uint 8
Byte 6	CH 2 pulse comparison value output								Uint 32
Byte 7									
Byte 8									
Byte 9									
Input data									
Bit No	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Data type
Byte 0	CH 1 Status input data								Uint 8
Byte 1	CH 1 pulse number								Uint 8
Byte 2									
Byte 3									
Byte 4									
Byte 5	CH 1 latched pulse number								Uint 8
Byte 6									
Byte 7									
Byte 8									
Byte 9	CH 2 Status input data								Uint 8
Byte 10	CH 2 pulse number								Uint 8
Byte 11									
Byte 12									
Byte 13									
Byte 14	CH 2 latched pulse number								Uint 8
Byte 15									
Byte 16									
Byte 17									

## Output data definition

Byte 0	
bit7~bit3	Reserved bit
bit2	0: CH 1 Comparison value failure; 1: CH 1 The comparison value is enabled
bit1	0: enabled CH 1 Electron probe function; 1: enabled CH 1 External signals trigger count zeroing function
bit0	0: CH 1 Stop counting, Clear the original count to zero; 1: CH 1 Start counting
Byte 1~4	CH 1 Pulse comparison value output, Unsigned 32-bit data
Byte 5	
bit7~bit3	Reserved bit
bit2	0: CH 2 Comparison value failure; 1: CH 2 The comparison value is enabled
bit1	0: enabled CH 2 Electron probe function; 1: enabled CH 2 External signals trigger count zeroing function
bit0	0: CH 2 Stop counting, Clear the original count to zero; 1: CH 2 Start counting
Byte 6~9	CH 2 Pulse comparison value output, Unsigned 32-bit data

## Input data definition

Byte 0	
bit7~bit3	Reserved bit
bit2	0: CH 1 count value is less than comparison value; 1: CH 1 count value is greater than comparison value
bit1	0: Never electron probe /the first channel count clear signal; 1: electron probe / the first channel count clear signal
bit0	0: CH 1 stop counting state, Clear the original count to zero; 1: CH 1 State of counting
Byte 1~4	CH 1 pulse input value, Unsigned 32-bit data
Byte 5~8	CH 1 pulse input latched value, Unsigned 32-bit data
Byte 9	
bit7~bit3	Reserved bit
bit2	0: CH 2 count value is less than comparison value; 1: CH 2 count value is greater than comparison value
bit1	0: Never electron probe /the first channel count clear signal; 1: electron probe / the first channel count clear signal
bit0	0: CH 2 stop counting state, Clear the original count to zero; 1: CH 2 State of counting
Byte 10~13	CH 2 pulse input value, Unsigned 32-bit data
Byte 14~17	CH 2 pulse input latched value, Unsigned 32-bit data

## 4. Machinery installation

### ● Dimension drawing

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

