

# DN-8368GB Quick Start

V 1.0



**ICP DAS CO., LTD.**

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# 1 Introduction

The DN-8368GB is General-Purpose terminal board connecting between servo driver (with pulse trains input amplifier) and ICP DAS PISO-PS600, PISO-VS600 or PMDK motion controller card. Please do not use it to connect any other cards. Moreover, it also includes 3-axis I/O signals. It can connect different brands of servo drivers and stepper drivers with the motion controller card. This manual describes signals and operation instructions of DN-8368GB; the content is divided into 4 parts: 1. Board layout, 2. I/O Signal connectors, 3. Jumper and switch setting, 4. LED function display, etc.

## 1.1 Board Layout for DN-8368GB

### Dimension and Placement

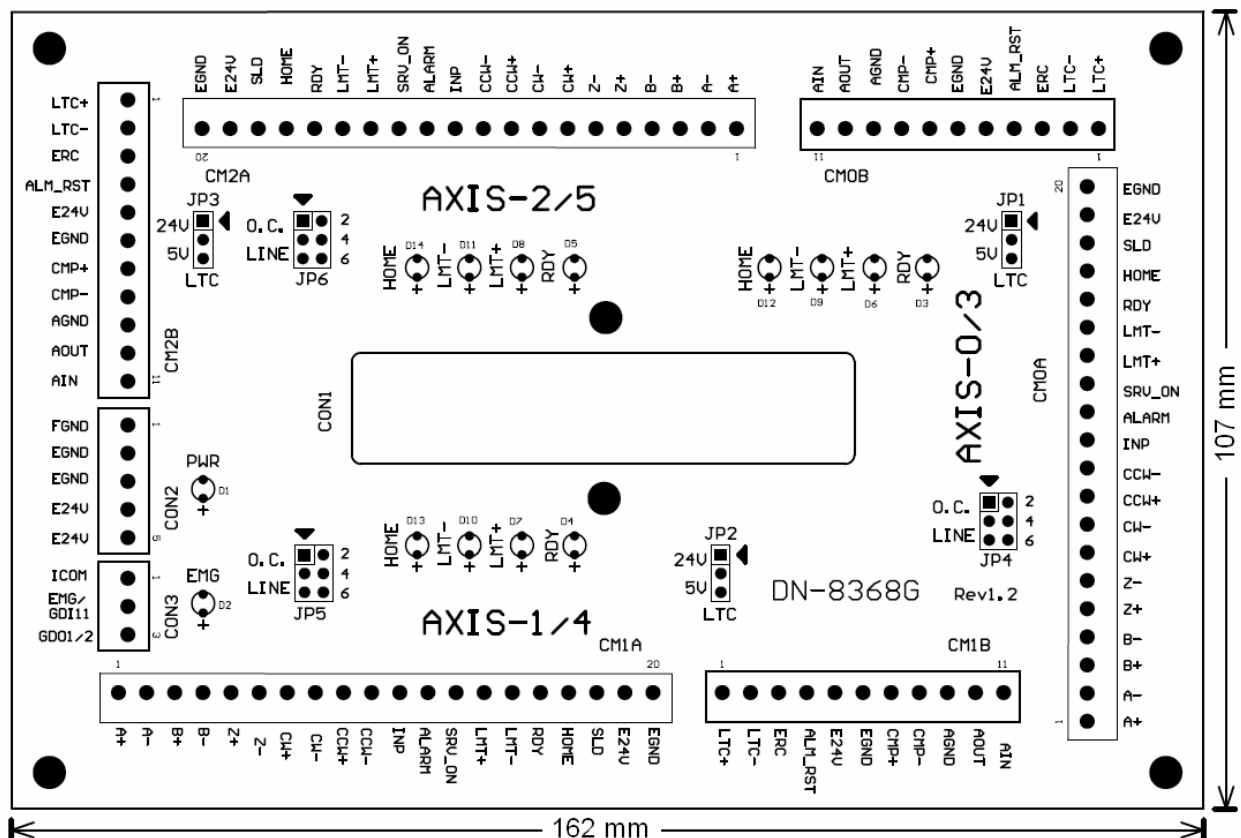


Fig. 1-1 Board layout for the DN-8368GB

## 1.2 Signal Connections for DN-8368GB

Assuring reliable connections is one of the most important tasks when sending or receiving data from your application systems. This chapter will introduce I/O connector (for general purposes) on DN-8368GB, that for specific I/O connector and other signals.

### ■ CON1

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The I/O connector on DN-8368GB is a 68-pin SCSI II connector that enables you to connect sensors and motor drivers to the motion card. Please note: there are two groups of connectors (CN1A/ CN1B) on the main card; therefore, the same signal may have a different name on each sub board. Please refer to Table 1-1, Table 1-2) for your reference.

Table 1-1 CN1A (be close the PCB)

No	Name	I/O	Function Axis	No	Name	I/O	Function Axis
1	AOUT0	O	Analog Output	35	AIN0	I	Analog Input
2	AOUT1	O	Analog Output	36	AIN1	I	Analog Input
3	AOUT2	O	Analog Output	37	AIN2	I	Analog Input
4	AGND	-	Analog Ground	38	AGND	-	Analog Ground
5	DGND	-	Digital Ground	39	ERC0	O	Error Counter Clear
6	LTC0	I	Position Latch	40	SVON0	O	Servo On
7	EA0	I	Encoder A-Phase	41	RDY0	I	Servo Ready
8	EB0	I	Encoder B-Phase	42	INP0	I	Servo In-Position
9	EZ0	I	Encoder Z-Phase	43	ALM0	I	Servo Alarm
10	CW0	O	Clockwise pulse	44	SLD0	I	Slow Down
11	CCW0	O	Counter-Clockwise pulse	45	ORG0	I	Origin Signal
12	CMP0	O	Compare Trigger	46	MEL0	I	Minus End Limit
13	EMG	I	Emergency Stop	47	PEL0	I	Positive End Limit
14	ALMRST0	O	Servo Alarm Reset	48	DGND	-	Digital Ground
15	DGND	-	Digital Ground	49	ERC1	O	Error Counter Clear
16	LTC1	I	Position Latch	50	SVON1	O	Servo On
17	EA1	I	Encoder A-Phase	51	RDY1	I	Servo Ready
18	EB1	I	Encoder B-Phase	52	INP1	I	Servo In-Position
19	EZ1	I	Encoder Z-Phase	53	ALM1	I	Servo Alarm
20	CW1	O	Clockwise pulse	54	SLD1	I	Slow Down
21	CCW1	O	Counter-Clockwise pulse	55	ORG1	I	Origin Signal
22	CMP1	O	Compare Trigger	56	MEL1	I	Minus End Limit
23	GDO1	O	Generic Digital Output	57	PEL1	I	Positive End Limit
24	ALMRST1	O	Servo Alarm Reset	58	DGND	-	Digital Ground
25	DGND	-	Digital Ground	59	ERC2	O	Error Counter Clear
26	LTC2	I	Position Latch	60	SVON2	O	Servo On
27	EA2	I	Encoder A-Phase	61	RDY2	I	Servo Ready
28	EB2	I	Encoder B-Phase	62	INP2	I	Servo In-Position
29	EZ2	I	Encoder Z-Phase	63	ALM2	I	Servo Alarm
30	CW2	O	Clockwise pulse	64	SLD2	I	Slow Down
31	CCW2	O	Counter-Clockwise pulse	65	ORG2	I	Origin Signal
32	CMP2	O	Compare Trigger	66	MEL2	I	Minus End Limit
33	DGND	-	Digital Ground	67	PEL2	I	Positive End Limit
34	ALMRST2	O	Servo Alarm Reset	68	VCC	-	5V Digital Power from Bus

Table 1-2 CN1B ( be distance from PCB )

No.	Name	I/O	Function Axis	No.	Name	I/O	Function Axis
1	AOUT3	O	Analog Output	35	AIN3	I	Analog Input
2	AOUT4	O	Analog Output	36	AIN4	I	Analog Input
3	AOUT5	O	Analog Output	37	AIN5	I	Analog Input
4	AGND	-	Analog Ground	38	AGND	-	Analog Ground
5	DGND	-	Digital Ground	39	ERC3	O	Error Counter Clear
6	LTC3	I	Position Latch	40	SVON3	O	Servo On
7	EA3	I	Encoder A-Phase	41	RDY3	I	Servo Ready
8	EB3	I	Encoder B-Phase	42	INP3	I	Servo In-Position
9	EZ3	I	Encoder Z-Phase	43	ALM3	I	Servo Alarm
10	CW3	O	Clockwise pulse	44	SLD3	I	Slow Down
11	CCW3	O	Counter-Clockwise pulse	45	ORG3	I	Origin Signal
12	CMP3	O	Compare Trigger	46	MEL3	I	Minus End Limit
13	GDI11	I	Generic Digital Input	47	PEL3	I	Positive End Limit
14	ALMRST3	O	Servo Alarm Reset	48	DGND	-	Digital Ground
15	DGND	-	Digital Ground	49	ERC4	O	Error Counter Clear
16	LTC4	I	Position Latch	50	SVON4	O	Servo On
17	EA4	I	Encoder A-Phase	51	RDY4	I	Servo Ready
18	EB4	I	Encoder B-Phase	52	INP4	I	Servo In-Position
19	EZ4	I	Encoder Z-Phase	53	ALM4	I	Servo Alarm
20	CW4	O	Clockwise pulse	54	SLD4	I	Slow Down
21	CCW4	O	Counter-Clockwise pulse	55	ORG4	I	Origin Signal
22	CMP4	O	Compare Trigger	56	MEL4	I	Minus End Limit
23	GDO2	O	Generic Digital Output	57	PEL4	I	Positive End Limit
24	ALMRST4	O	Servo Alarm Reset	58	DGND	-	Digital Ground
25	DGND	-	Digital Ground	59	ERC5	O	Error Counter Clear
26	LTC5	I	Position Latch	60	SVON5	O	Servo On
27	EA5	I	Encoder A-Phase	61	RDY5	I	Servo Ready
28	EB5	I	Encoder B-Phase	62	INP5	I	Servo In-Position
29	EZ5	I	Encoder Z-Phase	63	ALM5	I	Servo Alarm
30	CW5	O	Clockwise pulse	64	SLD5	I	Slow Down
31	CCW5	O	Counter-Clockwise pulse	65	ORG5	I	Origin Signal
32	CMP5	O	Compare Trigger	66	MEL5	I	Minus End Limit
33	DGND	-	Digital Ground	67	PEL5	I	Positive End Limit
34	ALMRST5	O	Servo Alarm Reset	68	VCC	-	5V Digital Power from Bus

## ■ CON2

The connector CON2 is a 5-pin connector for external Power supply (24V input). Table 1-3 shows its I/O connector signal description.

Table 1-3

Pin NO	Pin Define	Function description
1	FGND	Frame ground of DN-8368GB
2	EGND	Ground of the external power
3	EGND	Ground of the external power
4	E24V	External power supply of +24V DC
5	E24V	External power supply of +24V DC

## ■ CON3

The connector CON3 is a 3-pin connector for connecting general purpose I/O. There are one digital input and one digital output signal. When the connectors connect to the CN1A of main card (the one closer to the PCB board), the input signal is defined as emergency stop. When the connector connects to the CN1B of main card, the input signal is defined as general purpose input signal. Table 1-4 shows its I/O connector signal description:

Table 1-4

Pin NO	Pin Define	Function description
1	ICOM	Input common, when use with NPN sinking type sensor, connecting to E24V. When use with PNP sourcing type sensor, connecting to EGND.
2	EMG/GDI11	Emergency stop signal (or General purpose input signal)
3	GDO1/GDO2	General purpose output signal

■ CM0A~CM2A

The connector CMxA is a 20-pin connector that enables you to connect the main card to the signals of your motor drivers. The Table 1-5 shows its I/O connector signal description for the 20-pin connector on the DN-8368GB.

Table 1-5

Pin NO	Pin Define	Function description
1	A+	Encoder A-phase(+)
2	A -	Encoder A-phase(-)
3	B+	Encoder B-phase(+)
4	B -	Encoder B-phase(-)
5	Z+	Encoder Z-phase(+)
6	Z-	Encoder B-phase(-)
7	CW+	Positive Direction Pulse(+)
8	CW -	Positive Direction Pulse(-)
9	CCW+	Negative Direction Pulse(+)
10	CCW -	Negative Direction Pulse(-)
11	INP	In-Position signal from the servo motor driver
12	ALARM	Alarm signal from the servo motor driver
13	SRV_ON	Servo ON signal to the servo motor driver
14	LMT+	Positive End Limit signal (PEL) input
15	LMT-	Negative End Limit signal (MEL) input
16	RDY	RDY signal from the servo motor driver
17	HOME	Origin signal (ORG) input
18	SLD	Slow-Down signal input
19	E24V	External Power +24V
20	EGND	External Power Ground

## ■ CM0B~CM2B

The connector CMxB is an 11-pin connector that enables you to connect the main card to the signals of Digital and Analog input/output. The Table 1-6 shows its I/O connector signal description for the 11-pin connector on the DN-8368GB.

Table 1-6

Pin NO	Pin Define	Function description
1	LTC+	High Speed Position Latch input
2	LTC-	Ground for Position Latch input
3	ERC	Error Counter Clear signal to servo motor driver
4	ALM_RST	Alarm Reset signal to servo motor driver
5	E24V	External power +24V
6	EGND	External Power Ground
7	CMP+	High Speed Compare trigger output
8	CMP-	Ground for Compare trigger output
9	AGND	Ground of analog signal (only for PISO-VS600 and PMDK)
10	AOUT	Analog output signal (only for PISO-VS600 and PMDK)
11	AIN	Analog input signal (only for PISO-VS600 and PMDK)



## 1.3 Jumper Settings

### ■ JP1 ~ JP3

Jumper 1~3(Fig 1-2) controls the input voltage of LTC for 24V (Jumper position is in 1~2) or 5V (Jumper position is in 2~3). The default setting is 5V.

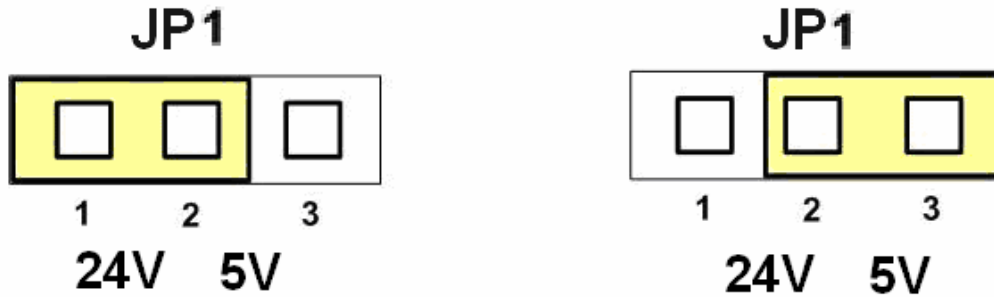


Fig. 1-2 Jumper 1~ Jumper 3 setting

### ■ JP4 ~ JP6

Jumper 4 ~ 6 (Fig 1-3) control the pulse output mode. Two types of the pulse output signal, Differential-Type and Open-Collector Type, can be selected from JP4 ~ JP6. The default setting is Differential-Type.

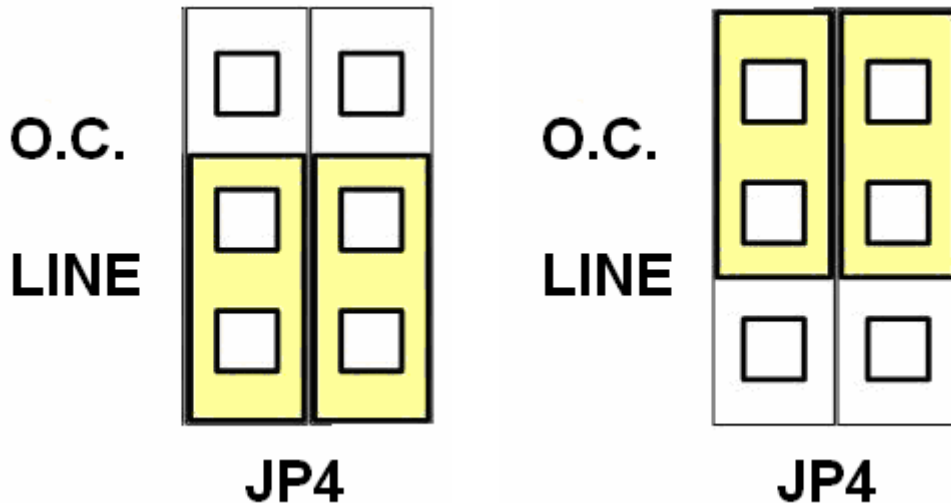


Fig 1-3 Jumper 4~6(Default setting is Differential-Type)

## 1.4 LED Description

LED is used for indicating the special or important DI state, there are two status on the daughter board, one is the machine I/O state ( Home, LMT-, LMT+, RDY, etc.), the other is Power and EMG state. These " LED" indicate the following status:

- **HOME:** The LED will be turned on when the motion control axis "Home" sensor is ON.
- **LMT -:** It shows the negative end-limit signal of motion control on the machine. The negative end-limit signal of motion axis is to decide the end point of minus moving. If this signal is on, the LED will be turned on. (This is the case when "Normal Open" mode is set, for "Normal Close" mode, the LED is turned off when signal is on.)
- **LMT +:** It shows the positive end-limit signal of motion control on the machine. The positive end-limit signal of motion axis is to decide the end point of positive moving. If this signal is on, the LED will be turned on. (This is the case when "Normal Open" mode is set, for "Normal Close" mode, the LED is turned off when signal is on.)
- **RDY:** It point out whether the servo motor is in the state that can be controlled. The LED will be turned on when the motor can be controlled.
- **Power:** It shows the power state of DN-8368GB. The LED will be turned on when it is power on.
  - **EMG:** It shows the state of EMG signal. The LED will be turned on when the EMG signal is triggered.

## Technical Support

If you have problems about using this product, please contact ICP DAS Product Support.

Email: [Service@icpdas.com](mailto:Service@icpdas.com)