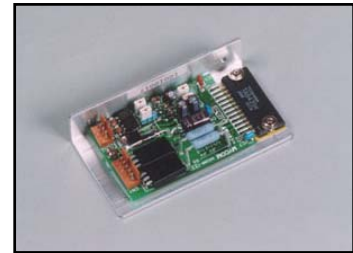


IMS200 Series Driver

2 Phase DC Type Driver Units

- A compact package matching most existing motors
- 24Vdc Power Supply Input
- Opto-isolated inputs and outputs
- Auto-current down feature
- Full Step, Half Step, 1/4 Step, 1/8 Step setting selection



1. Specifications

Model	IMS 200-220	
Drive Methods	Bi-polar ; constant current chopper driver	
Power Consumption	Below 480 mA	Below 770 mA
Input Power Supply	DC 24V ± 10%	
Output Current	1.2 Amp per phase	2.0 Amp per phase
Stepper Motor Voltage	Max. 24Vdc / Phase	
Resolution	Basic Step : 1.8° (1/1, 1/2, 1/4, and 1/8)	
Function	Auto-current down	
Input Signals	All Opto Isolated Input resistance : 390 Ω Input current : 8mA~ 10mA Signal voltage H : 4~ 5V L : 0~ 0.5V	
CW / CCW (preferred pulse type)	<p>In Bi-Clock mode Clockwise direction pulses applied to the CW input. Counter clockwise direction pulses applied to the CCW input. Rising edge of input pulse starts to move.</p> <p>Timing chart of Bi-Clock signal</p>	
Pulse / Direction	<p>In Pulse / Direction mode Stepping pulses applied to the Pulse input. Direction logic signal applied to the CW/CCW input. Rising edge of input starts to move.</p> <p>Timing chart of Pulse/Direction signal</p> <p>[L] Level : CW [H] Level : CCW</p>	
Dielectric Strength	<p>No abnormality detected after the application of the below voltage among each terminal for one minute in normal temperature and humidity :</p> <p>Power input terminal – PE terminal : 1.5KV (60Hz) Power input terminal – Signal I/O terminal : 3.0KV (60Hz)</p>	

Insulation Resistance	100M ohms or higher with DC500V applied in normal temperature and humidity. <ul style="list-style-type: none"> • Power input terminal – PE terminal • Power input terminal – signal input terminal
Operating Environment	Temperature : 0 ~ +40°C No freezing Humidity : less than 80% No condensation
Storage Environment	Temperature : -10~+60°C No freezing Humidity : less than 80% No condensation
Operating Height	Less than 1,000m from sea level
Atmosphere	In the room without corrosive gas, inflammable gas or dust, without splashing water or oil.
Weight	75 g

2. Applicable Motor Range

Type	Motor Size (NEMA)	Motor Model	Max. Holding Torque (kgcm)	Rotor Inertia (gcm ²)	Step Angle Half/Full	Phase Current (Amps)	Voltage (Vdc)	Phase Resistance (Ohms)	Motor Weight (kg)	Driver Type
STANDARD (PS Series)	17	PS 445-01A (B)	2.2	36	1.8°/0.9°	1.20	4.0	3.3	0.26	IMS200-120
		PS 466-01A (B)	6.0	125	1.8°/0.9°	1.20	6.0	5.0	0.55	IMS200-120
	23	PS 468-21A (B)	9.0	220	1.8°/0.9°	1.50	5.4	3.6	0.85	IMS200-120
		PS 4610-01A (B)	10.8	350	1.8°/0.9°	1.88	6.0	3.2	1.40	IMS200-120
		PS 496-02A (B)	12.5	560	1.8°/0.9°	1.25	5.5	4.4	1.45	IMS200-120
	34	PS 499-02A (B)	22.0	1100	1.8°/0.9°	2.00	6.0	3.0	2.16	IMS200-220
		PS 496M-02A (B)	12.5	560	0.9°/0.45°	1.25	5.5	4.4	1.45	IMS200-120
PS 499M-02A (B)		22.0	1100	0.9°/0.45°	2.00	6.0	3.0	2.60	IMS200-220	
HI-TORQUE (PF Series)	17	PF 445-01 A (B)	3.2	68	1.8°/0.9°	1.2	4.0	3.3	0.35	IMS200-120
	23	PF 464-02A (B)	4.3	120	1.8°/0.9°	2.0	2.8	1.4	0.47	IMS200-220
		PF 466-02A (B)	8.5	280	1.8°/0.9°	2.0	3.6	1.8	0.70	IMS200-220
		PF 468-02A (B)	13.5	480	1.8°/0.9°	2.0	4.5	2.25	1.00	IMS200-220
	34	PF 496-01A (B)	20.0	1400	1.8°/0.9°	2.0	4.4	2.2	1.75	IMS200-220
		PF 499-01A (B)	44.0	2700	1.8°/0.9°	2.0	6.4	3.2	2.80	IMS200-220
PF 4913-01A (B)		66.0	4000	1.8°/0.9°	2.0	7.6	3.8	3.93	IMS200-220	

Note : Motor model ending with A - single shaft

Motor model ending with B - double shaft

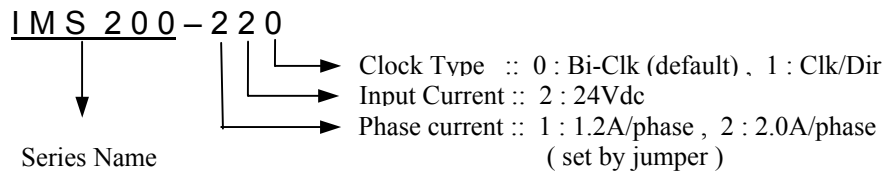
Motor Electrical Specifications

Dielectric Strength	No abnormality detected after the application of 0.5KV at 50 Hz between motor windings and frame for duration of one minute
Insulation Resistance	100 Mohms or better with 500V potential applied between motor windings and frame at normal ambient temperature and humidity
Insulation Class	Class B
Operating Environment Temperature	0°C ~ + 40°C

Motor Mechanical Specifications

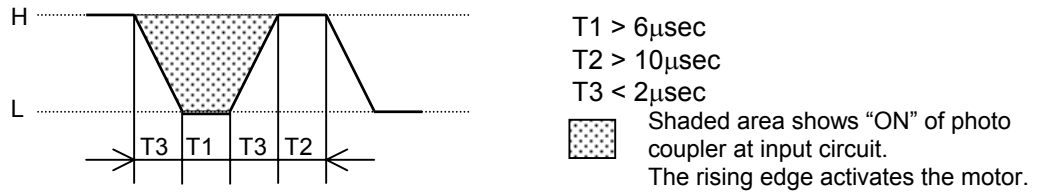
Shaft Radial Play	NEMA 17 motor	0.0006 in. (max) at 15.87 oz. force 0.015mm (max) at 450g
	NEMA 23/34 motor	0.0008 in. (max) at 15.87 oz. force 0.020mm (max) at 450g
Shaft Axial Play	NEMA 17 motor	0.0008 in. (max) at 15.87 oz. force 0.020mm (max) at 450g
	NEMA 23/34 motor	0.00031 in. (max) at 15.87 oz. force 0.080mm (max) at 450g
Shaft Runout	0.0005 T.I.R. (inches) (at shaft end)	
Step Angle Accuracy	± 5% (max)	
Bearing Type	ABEC 5P Deep Groove Permanently Sealed & Lubricated	

3. Model Number Identification

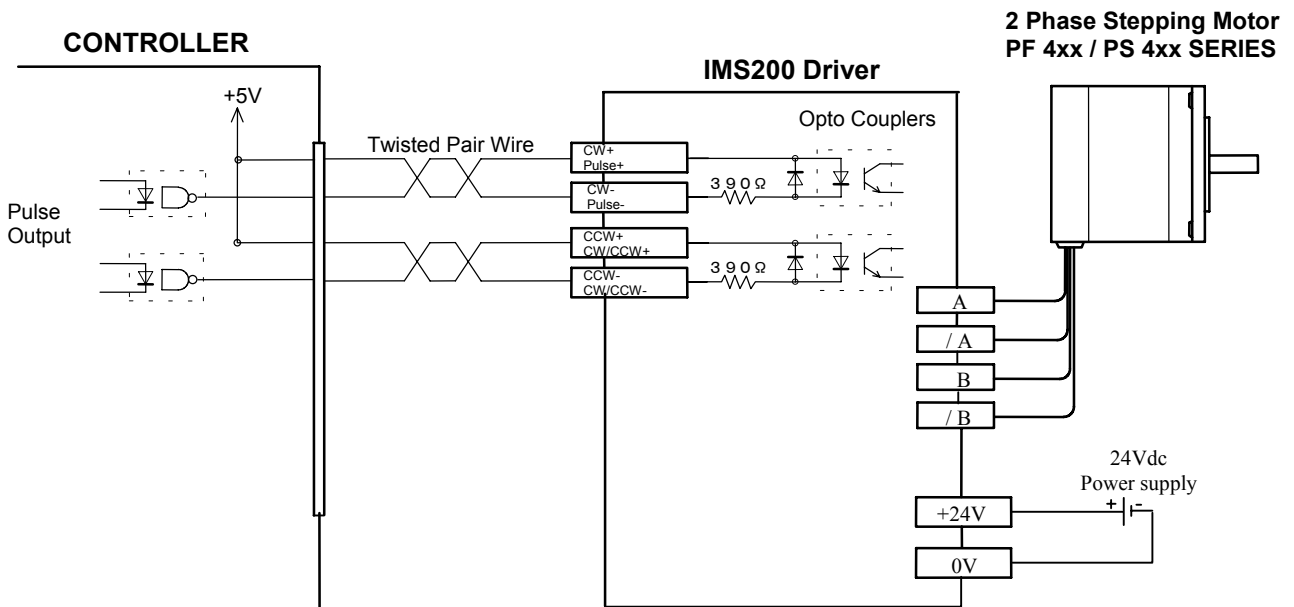


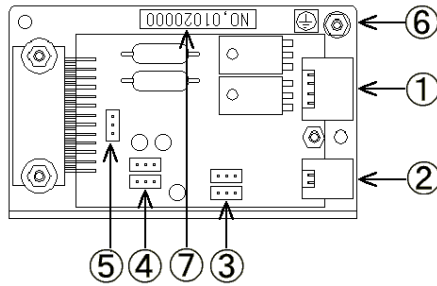
4. Connection Diagram

4-1. Input Signal Waveform



5. Connection Diagram





① Power Supply input & Motor Lead Connector (CN1)

CN1	 IL-6P-S3FP2
1	DC24V
2	0V
3	/B phase
4	B phase
5	/A phase
6	A phase

Motor leads
(refer to table below)

Connect motor leads to these terminals as follows :

Terminal	PS44x	PS46x / 49x	PF44x	PF46x	PF49x
A	Red	Red	Red	Red	Red
/A	White	Red/White	Blue	Red/White	Blue
B	Yellow	Green	Green	Green	Green
/B	Blue	Green/White	Black	Green/White	Black
NC	Brown	Black	White	Black	White
NC	Brown	White	Yellow	White	Yellow

* NC : no connection, tape and isolate individually

② Clock Input connection (CN2)

CN2	IL-4P-S3FP2	
	1 Clock Setting	2 Clock Setting
1	PULSE+	CW+
2	PULSE-	CW-
3	DIR+	CCW+
4	DIR-	CCW-

③ Clock Format Setting (JP1, JP2)

Setting	Jumper Setting	Input Method	Remarks
1 ◦ ◦ 1 ◦ ◦	JP1 : 2-3 JP2 : 2-3	1 Pulse setting (Clock/Dir)	
1 ◦ ◦ 1 ◦ ◦	JP1 : 1-2 JP2 : 1-2	2 Pulse Setting (CW / CCW)	Factory Set

④ Step Resolution Selection (JP3,JP4)

Setting	Resolution	JP3	JP4	Remarks
1 ◦ ◦	1/1	1-2	1-2	
	1/2	1-2	2-3	Default
1 ◦ ◦	1/4	2-3	1-2	
	1/8	2-3	2-3	

⑤ Motor Output Phase Current Setting (JP5)

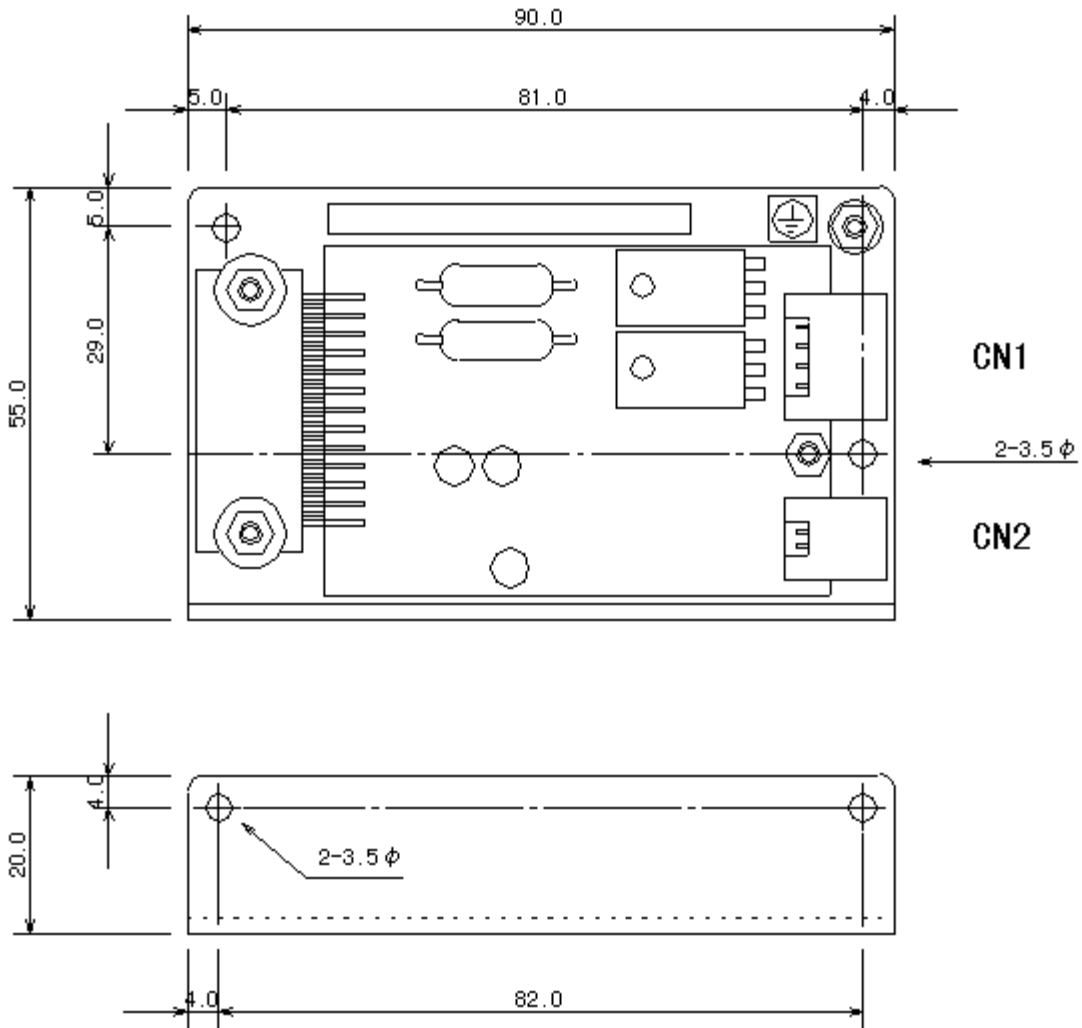
Setting	Jumper Setting	Phase Current	Remarks
	JP5 : 2-3	1.2 Amps / Phase	
	JP5 : 1-2	2.0 Amps / Phase	Default

⑥ Frame Ground (PE)

Connect to system ground point. Use AWG18 (0.75mm²) or larger leads for connection.

⑦ Serial Number Label

7. External Dimensions (without cover)



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