

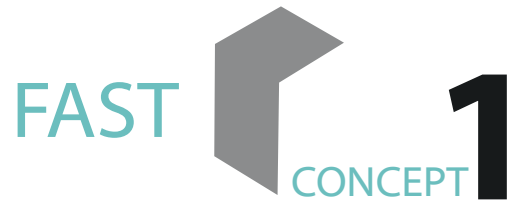


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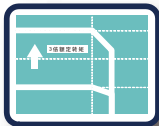
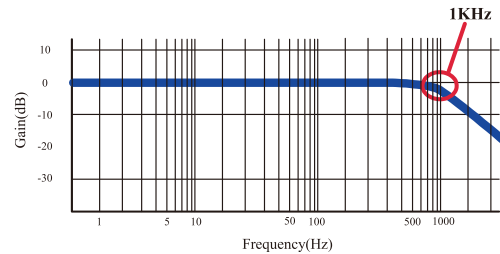
MTSD - B1 SERIES
Full Digital AC Servo Driver System





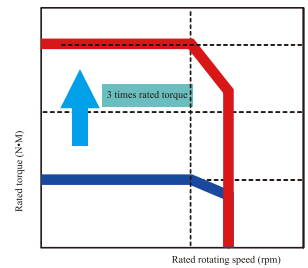
Response frequency 1KHz

Realize speed response frequency 1KHz (200W experimental model)
Up-to-date chip is adopted to improve computing speed; algorithm is controlled through the newly developed speed loop and current loop to improve the servo system's response control performance.



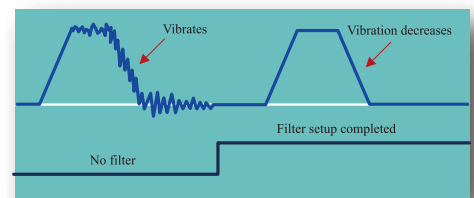
3 times overload

Torque 3 times overload
MTSD-B1 series of Servo driver has the capacity for 3 times overload, which improves the servo's responsiveness.



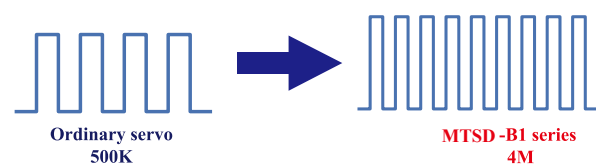
Grade 2 Notch Filter

Grade-2 notch filter settable
Grade-2 notch filter that can reduce phase lag is used to restrain resonance of mechanical system and improve equipment's speed response.

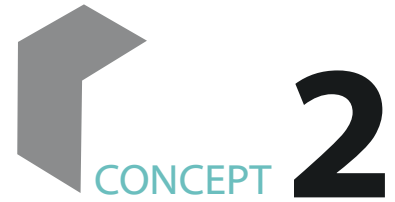


Input and output pulse frequency 4Mbps

Pulse instruction and feedback realize 4Mbps
In order to respond to top high resolution instruction (pulse form) in the industry, MTSD-B1 series servo driver's instruction input and feedback have achieved 4Mbps. High resolution pulse receipt can be realized under half-closed loop and fully-closed loop.

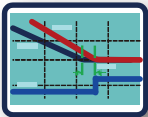
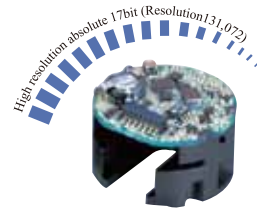


PRECISENESS



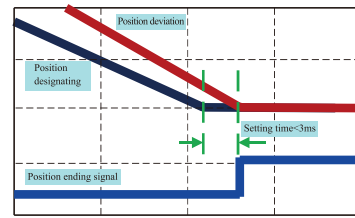
High resolution

Support up to 17 bit absolute value encoder
It can carry 17 bit (131,072 lines) absolute value encoder to improve positioning accuracy and low-speed operation stability. It can implement control suitable for high resolution encoder.



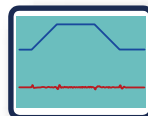
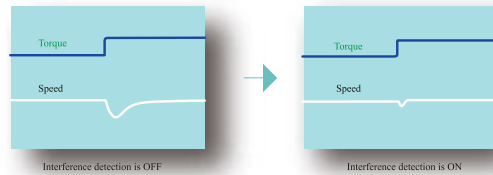
Shortened positioning time

Position setting time shortened!
Position setting time of the device can be greatly reduced by using the new algorithm.



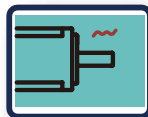
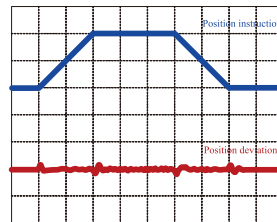
Restrained external interference

Able to restrain external interference
Effect from external interference can be restrained effectively by expanding the new interference observation function of suitable frequency.



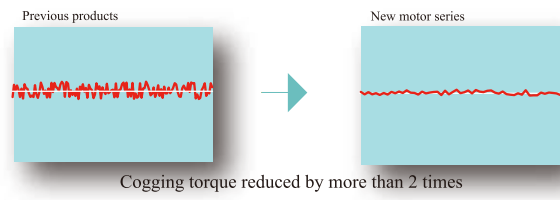
Quick instruction tracking

Quick position and speed instruction tracking
As the new position and speed controller is adopted, position control tracking is greatly improved, and position deviation is achieved to be ≈ 0 .



Low cogging torque

The motor has low cogging torque to realize stable operation
By using the new magnetic field analysis design and motor processing technology, the motor's torque pulsation is reduced, thus to improve speed stability and reduce servo system's torque pulsation.





Regenerative processing function

MTSD -B1 series is built-in regenerative resistor (optional part) that can absorb regenerated electricity when motor is decelerating. When the built-in regenerative resistor is not capable enough, external regenerative resistor can be used.

Built-in dynamic brake

It has built-in dynamic brake for emergency braking. Through parameter setting, many action modes of motor shutdown can be chosen for cases of servo OFF, forward/backward drive inhibition, power cutoff, and stop due to failure.

Friction torque compensation function

Responsiveness is improved to reduce effect of mechanical friction. According to deviation load compensation and action direction at the time of compensatory operation, 2 types of friction compensation can be set for dynamic friction compensation that changes direction.

Gain switch-over function

There are many gain switch-over modes inside. Different gains can be set at stoppage and operation to improve the system's responsiveness.

Zero clamping function

When speed control (zero clamping) is used, as analog instruction may lead to drifting, the servo can be locked up by using this function to make it stop running.

Password setting

It can prevent user parameter from being modified inadvertently.

Automatic motor judgment

The servo driver automatically judges the servo motor's power and specification (only applicable to communication type encoder), no need to set motor parameters; when connection is not applicable to motor, relevant warning will be given.

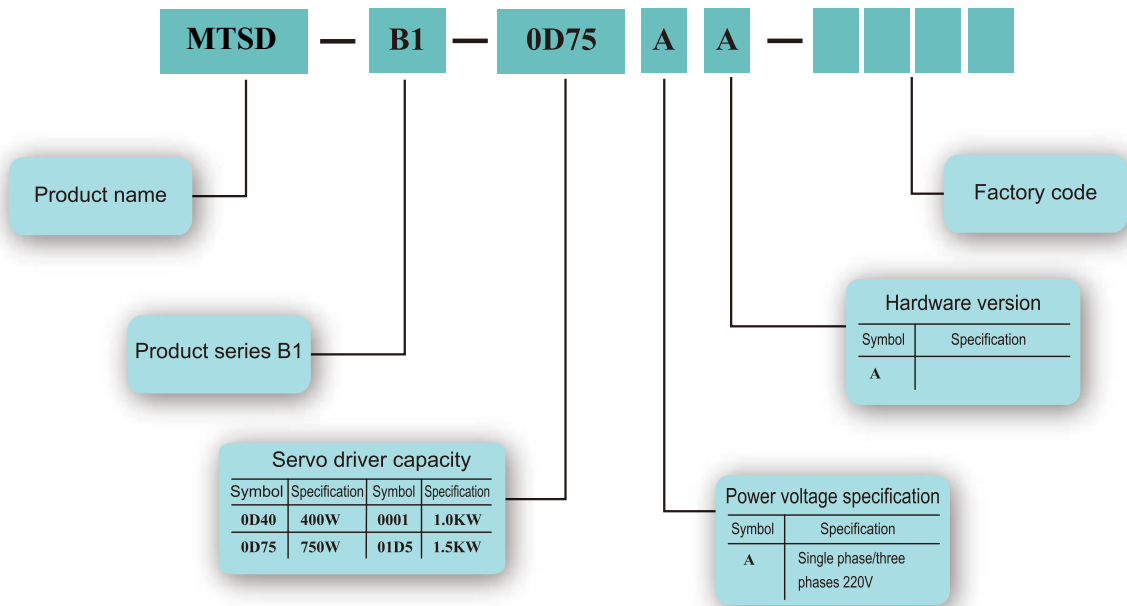
Power source higher harmonic solution

In order to reduce higher harmonic, it is equipped with the terminal to connect DC reactor.

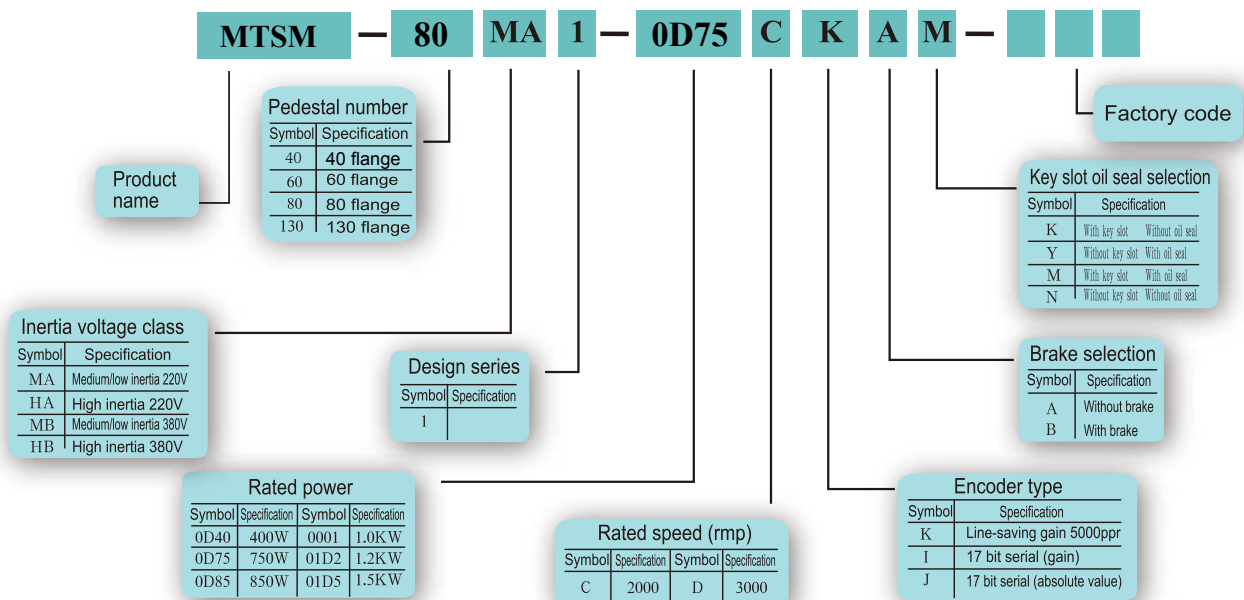
5-digit LED and built-in keyboard

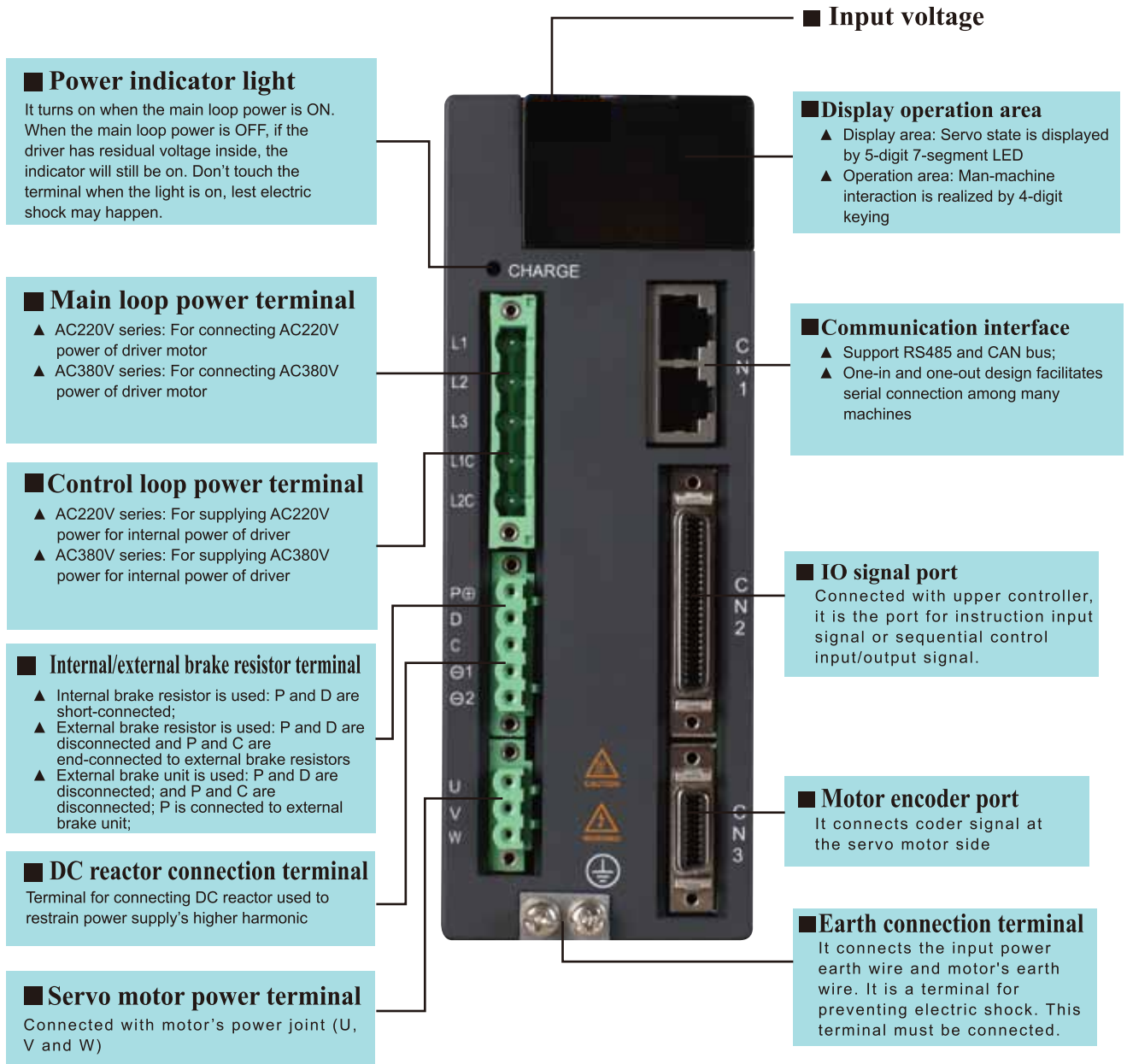
Setting or monitoring can be implemented at the site conveniently. Built-in keyboard can be used to change parameters, monitor and adjust alarm tracking.

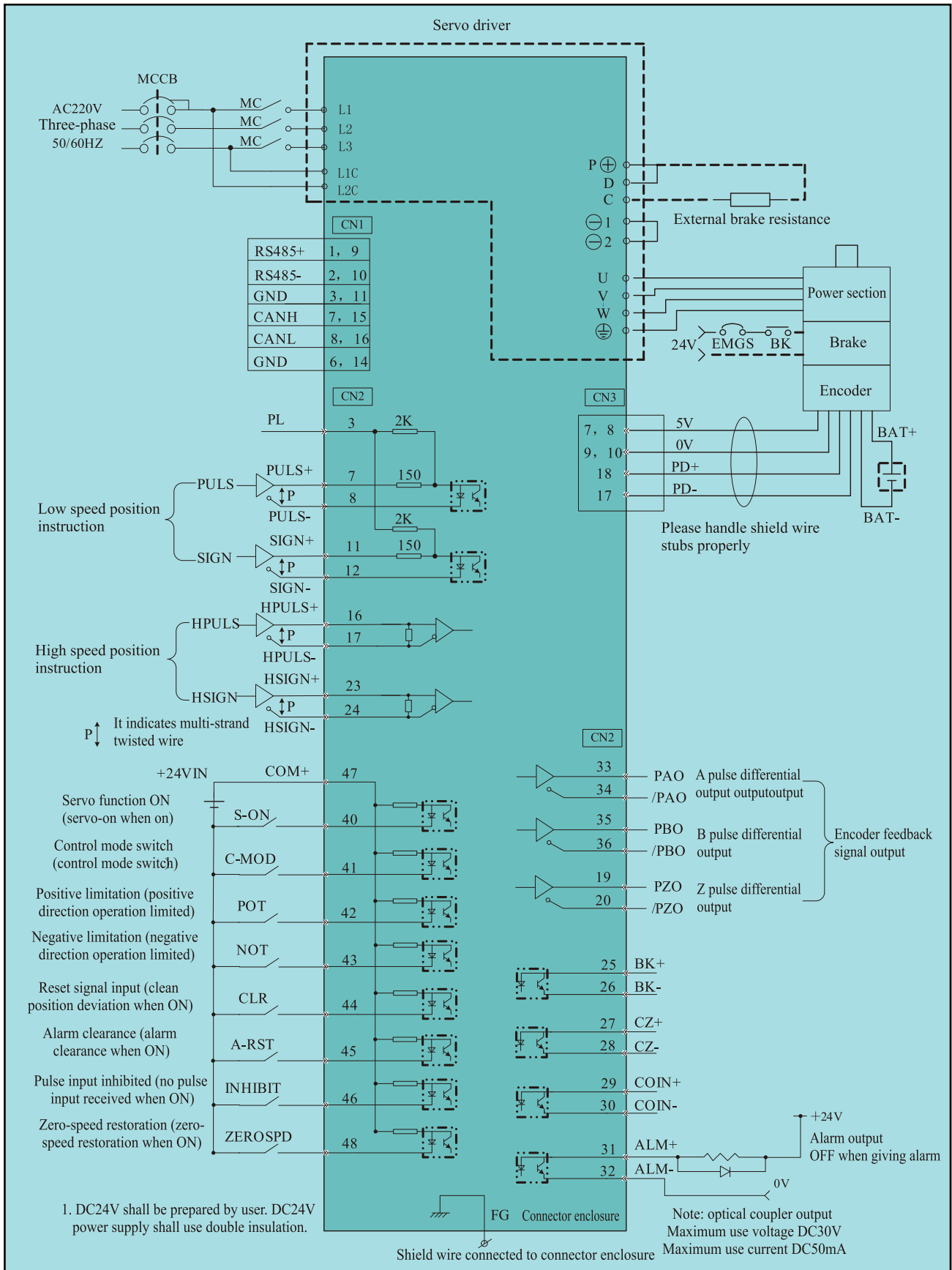
Servo driver



Servo motor



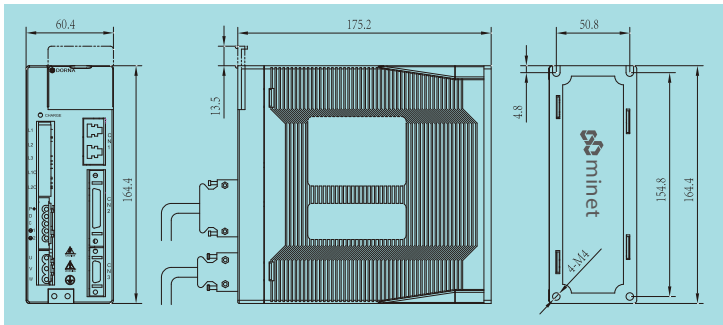




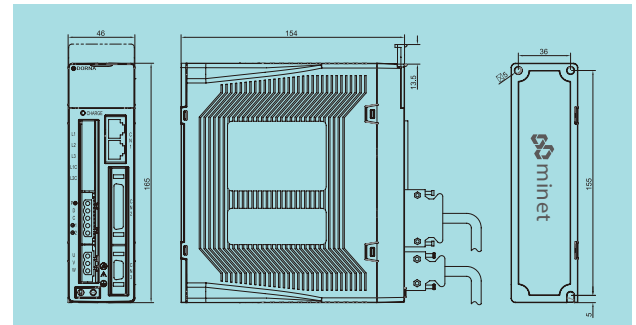
Basic specification				
Input power		220V class	Three-phases AC220V +10~-15%, 50/60Hz	
Control method			Single-phase or three-phases full wave rectification IGBT PWM control, sine-wave current drive	
Feedback			Line-saving gain encoder: 5000ppr (1/20000 resolution, gain); Serial coder: 17bit (gain/absolute value)	
Use condition	Use ambient temperature / Storage temperature		Use ambient temperature: 0~+55 C ; Storage temperature: -20~85 C	
	Ambient humidity / Storage humidity		Below 90%RH (icing and dewing not allowed)	
	Anti-vibration / Anti-impact strength		4. 9 m/s ² ~19. 6 m/s ²	
	Protection class / cleanliness		Protection class: IP10, Cleanness: 2 But it should be: <ul style="list-style-type: none"> • With no corrosive gas and combustible gas • With no water, oil or drug splashing • An environment with little dust, ash, salt and metallic powder 	
Elevation			Below 1000m	
Applicable standard			CE	
Structure			Pedestal installation type	
Performance	Speed control range		1: 5000	
	Speed fluctuation rate	Load fluctuation	0 ~ 100% load: Below ±0.01 (rated speed)	
		Voltage fluctuation	Rated voltage ± 10%: 0.001% (at rated speed)	
		Temperature fluctuation	25 ± 25 C : below ±0.1% (at rated speed)	
	Torque control precision (reproducibility)			± 3%
Soft start time setting			0 ~ 10s (acceleration and deceleration may be set respectively)	
Input/output signal	Coder frequency-divided pulse output		Phase A, phase B, and phase Z: Linear drive output Frequency-divided pulses: Line-saving gain coder may set it freely 17bit serial coder is 16 ~ 16384;	
	Sequential control input signal	Assignable input signal	Number of points	8 points
			Function	Servo connection input (S-ON), control mode switch-over input (control mode switch-over input), positive drive inhibition input (POT), negative drive inhibition input (NOT), deviation counter clear input (CLR), alarm clear (A-RST), gain switch-over input (GAIN), instruction pulse inhibition input (INH), etc. Assignment of the above-mentioned signals and positive/negative logic change can be achieved.
	Sequential control output signal	Non-assignable input signal	Number of points	1 point. Alarm signal;
		Assignable input signal	Number of points	3 points
Function			Alarm signal (ALM), positioning completion signal (COIN), Z pulse collector signal (CZ), external brake lifting signal (BK), servo ready (S-RDY), etc. Assignment of the signals mentioned as above and positive / negative logic change can be achieved.	
Communication function	RS485 comm.	1:N comm.	In case of use relay, maximum is N=31 stations	
		Axis address setting	Through parameter setting	
		Connecting equipment	Computer and upper machine	
	CANopen comm.	1:N comm.	In case of use relay, maximum is N=127 stations	
		Connecting equipment	Upper machine	
Display keying function			7 segments of LED * 5 digits, 4 keys	
Dynamic brake (DB)			Act when main loop power is OFF, servo is alarming, servo is off, and in case of over travel (OT)	
Regenerative processing			Built-in regenerative resistor or external regenerative resistor	
Over-travel prevention			In case of POT or NOT input action, dynamic brake (DB) stops, deceleration stops, or free operation stops	
Protection function			Over-current, over-voltage, under-voltage, over-load, regeneration fault, etc.	

SERVO MOTOR

MTSD-B1 drive (B type case) dimensions



MTSD-B1 drive (A type case) dimensions



Specification

Working regime: S1 continuous
 Vibration: 5G
 Insulation resistance: DC500V, above 10MΩ
 Operational temperature: 0 ~ 40 °C (no freezing)
 Altitude: Below altitude 1000m

Heat resistance class: B
 Insulation resistance: AC1500V, 1 minute
 Installation mode: Flange type
 Operational humidity: 20% ~ 80% (no dewing)
 Way of protection: Fully closed and self cooled IP65
 (except the part that the shaft goes through)

- 40MA1-0D10 D
- ● 60MA1-0D20 D
- ● ● 60MA1-0D40 D

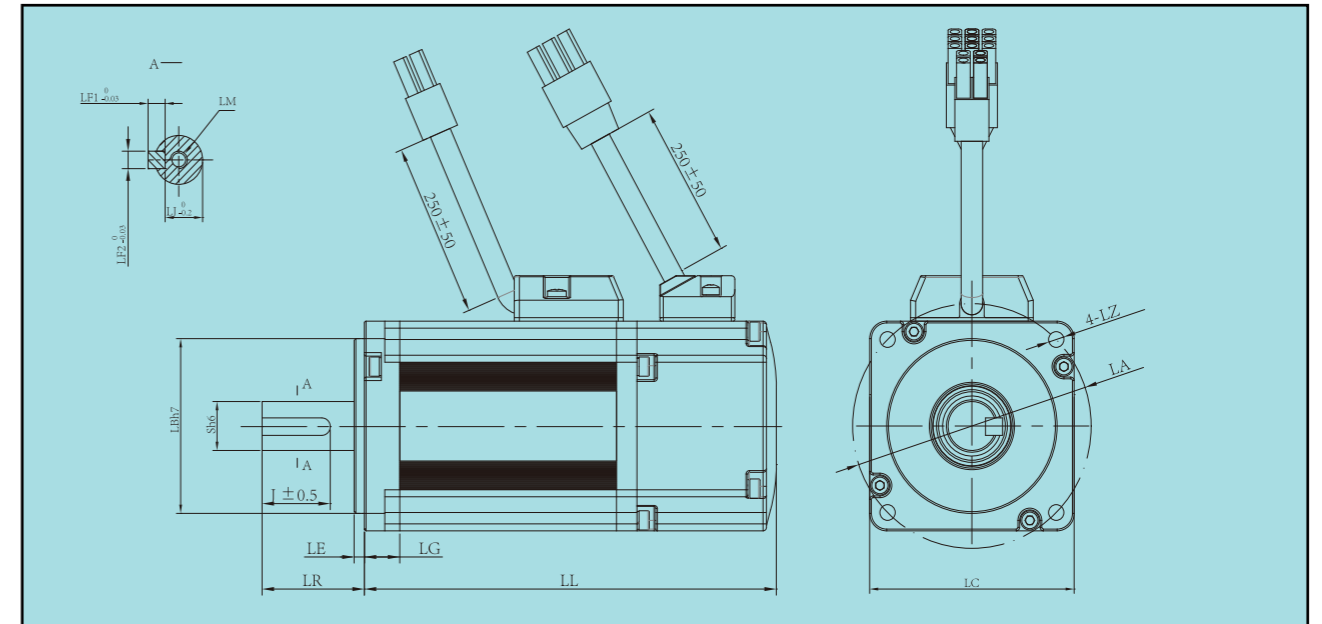
Parameter table of 40/60/80 series servo motor

Voltage		220V			
Motor model		●	● ●	● ● ●	80MA1-0D75 D
Pedestal No.		□40	□60	□60	□80
Rated output	W	100	200	400	750
Rated torque	N•m	0.32	0.64	1.27	2.39
Instantaneous max. torque	N•m	0.96	1.91	3.82	7.16
Rated current	Arms	1.1	1.7	2.9	4.1
Instantaneous max. current	Arms	3.4	5	9	12.5
Rated speed	Min ⁻¹	3000	3000	3000	3000
Max. speed	Min ⁻¹	5000	5000	5000	5000
Torque constant	N•m/Arms	0.32	0.38	0.45	0.57
Rotational inertia	Kg•m ² ×10 ⁻⁴	0.048	0.13	0.25	0.88

Parameter table of 130 series servo motor

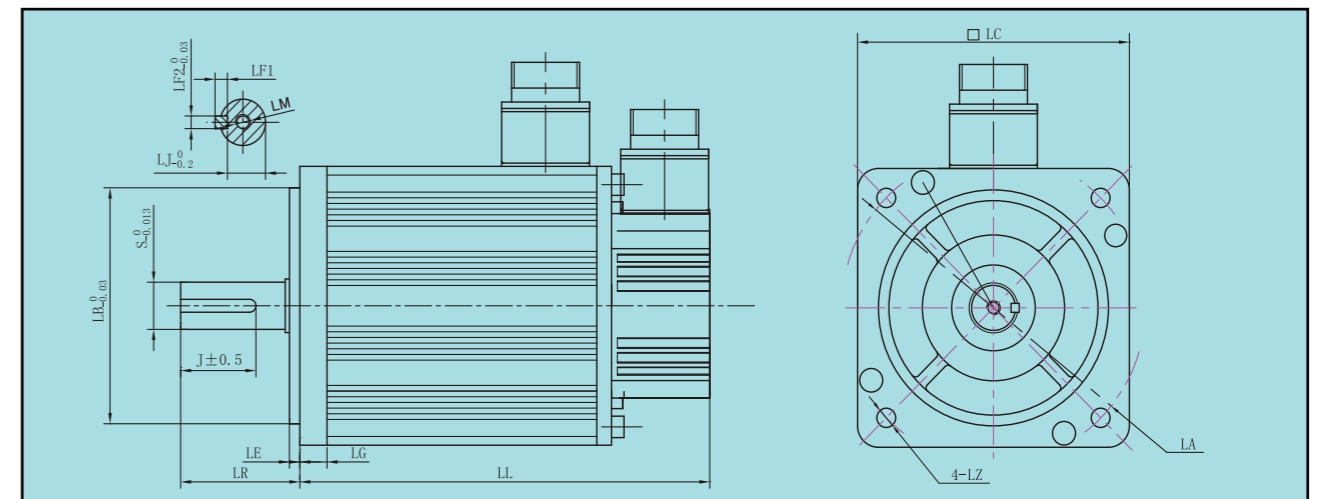
Voltage		220V			
Motor model		130MA1-0D85 C	130MA1-0001 C	130MA1-01D2 C	130MA1-01D5 C
Pedestal No.		□130	□130	□130	□130
Rated output	W	850	1000	1200	1500
Rated torque	N•m	4.0	5.0	6.0	7.2
Instantaneous max. torque	N•m	12.0	15.0	18.0	21.6
Rated current	Arms	4.1	5.1	6.3	7.5
Instantaneous max. current	Arms	12.7	15.8	19.5	22.8
Rated speed	Min ⁻¹	2000	2000	2000	2000
Max. speed	Min ⁻¹	3000	3000	3000	3000
Torque constant	N•m/Arms	0.98	0.98	0.95	0.96
Rotational inertia	Kg•m ² ×10 ⁻⁴	7.7	9.5	11.4	14.3

Installation dimensions of 40/60/80 series motor unit : mm



Model	Flange face dimensions				Shaft end dimensions					LL	LR	LE	LG
	LC	LA	LB	LZ	S	LJ	J	LF1	LLF2				
40MA1-0D10 D	40	46	30	4.3	8	6.2	16	3	3	105.8	28	3	7
60MA1-0D20 D	60	70	50	5.5	14	11	20	5	5	105	30	3	8
60MA1-0D40 D	60	70	50	5.5	14	11	20	5	5	125	30	3	8
80MA1-0D75 D	80	90	70	6.5	19	15.5	25	6	6	129.7	35	3	9.8

Installation dimensions of 130 series motor unit : mm



Model	Flange face dimensions				Shaft end dimensions					LL	LR	LE	LG
	LC	LA	LB	LZ	S	LJ	J	LF1	LLF2				
130MA1-0D85 C	130	145	110	9	22	18.5	36	6	6	163	57	5	13
130MA1-0001 C	130	145	110	9	22	18.5	36	6	6	172	57	5	13
130MA1-01D2 C	130	145	110	9	22	18.5	36	6	6	181	57	5	13
130MA1-01D5 C	130	145	110	9	22	18.5	36	6	6	197	57	5	13

Note: Information contained in this manual is general description or introduction to characteristics, not always consistent with the fact in actual application, or possibly not fully applicable due to further development of product.