



HiGENs FDA7000

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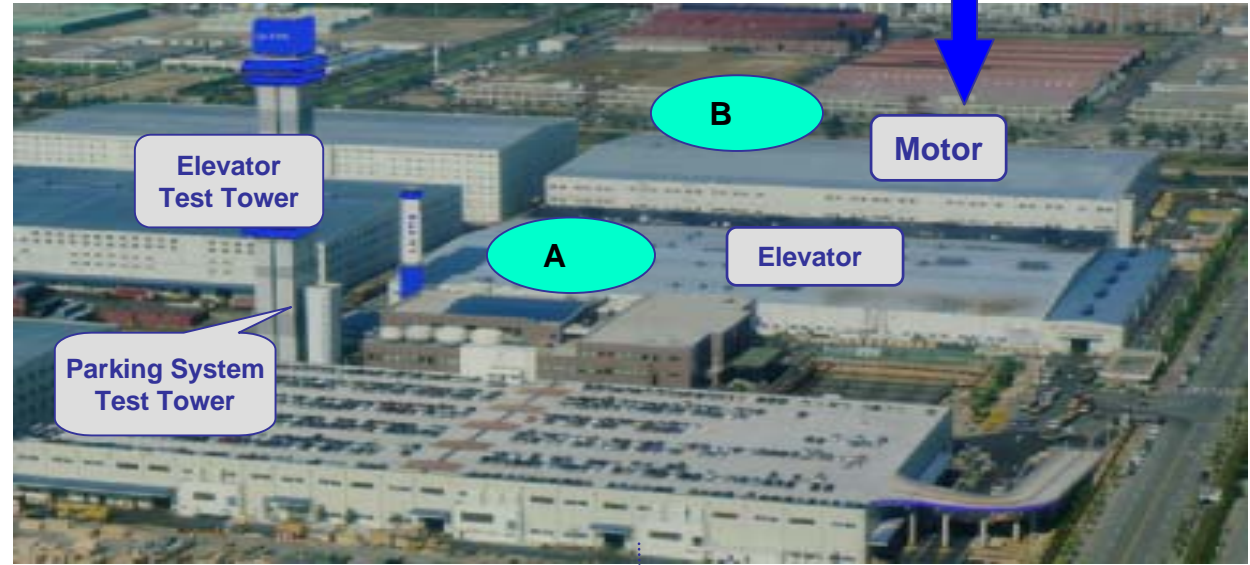
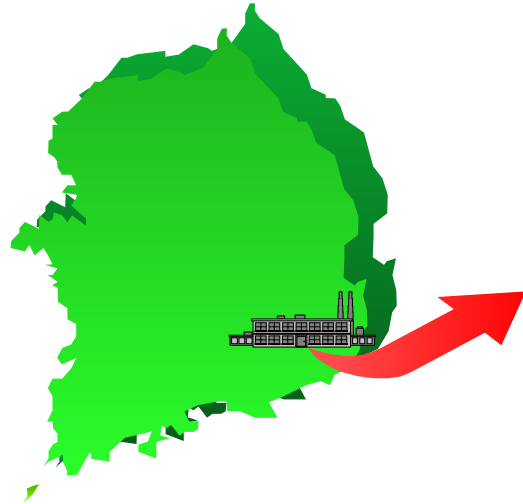


1. Motor
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1. Motor



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1963

1977 Elevator

1986

1995 LG

1997

1998 LG

1998 LG

2000 LG-OTIS Elevator Company

2003 OTIS-LG Elevator Company

143 People

12,137 m²

Capa

523,200 /

(LG

LG

)

-
-
- Elevator
-

2.

BRINGING SOLUTIONS TOGETHER



3. FDA7000

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Drive system	FDA7001	FDA7002	FDA7004	FDA7005	FDA7010	FDA7012	FDA7015	FDA7020	FDA7030	FDA7045	FDA7075
Power supply voltage *(Note 1)	3 phase AC200~230V +10/-15%, 50/60Hz										
Power capacity [kVA]	0.5	0.8	1.3	1.5	2.1	2.5	3.1	4.1	6	8	12
Voltage type	3-phase sine wave drive AC servo motor										
Continuous output current [A]	1.25	2.1	3.2	4.2	6.9	9.8	11	16	21	32	50
Maximum output current [A]	3.8	6.3	9.6	12.6	19.2	29	33	48	63	96	132
Detector model	Standard: Incremental 2000 ~ 10000[p/rev] Absolute Encoder : serial 11bit, 17bit, 21bit[p/rev]										
Output signal type	Differential line driver output										
Detector accuracy	1000-10000 [p/rev] (Not to exceed 400 [kp/sec])										
Detector power supply	Not to exceed DC 5 [V], 0.3 [A]										
Drive system	3-phase voltage type PWM drive (PM series IPM used)										
Option	Digital loader, Monitor power cable, encoder cable, CN1 connector, CN2 connector										
Operating ambient temperature	0-50 [°C]										
Ambient humidity	Not to exceed 90 [%] (Should be free of dewing)										
Storage temperature	-20 ~ +80 [°C]										
Insulating resistance	To be greater than DC 500 [V] 10 [M Ω]										
Structure	Book Type										

3. FDA7000

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Speed control specifications	Speed control range	1 : 6000
	Frequency response characteristics	600 Hz
	Speed command input	DC -10 +10 [V], maximum speed (can be adjusted on loader)
		Internal digital command (operation can be set in 7 steps)
	Speed fluctuation rate	Not exceeding $\pm 0.01\%$ (Rated load: 0-100%)
		Not exceeding $\pm 0.01\%$ (Rated power supply: $\pm 10\%$)
Not exceeding $\pm 0.1\%$ (Temperature fluctuation : 25 ± 25)		
Acceleration/deceleration time	Can be accelerated/decelerated in straight line or in "S" shape (0-100 [sec] in unit of 0.01 sec)	
Position control specifications	Position input frequency	500 [kpps]
	Position input type	Direction + pulse, forward run pulse + reverse run pulse
		2-phase pulse (A phase + B phase)
Position input type	Open collector, line driver system	
Torque control specifications	Torque command input	DC -10 +10 [V], Maximum command (can be adjusted on loader)
	Torque linearity	Not exceeding 4 [%]
	Limit speed command	DC -10 +10 [V], Maximum speed (can be adjusted on loader)
Built-in functions	Protective functions	Overcurrent, regenerated overvoltage, overload, motor miswiring, drive overheat, encoder error, voltage shortage, overspeed and excessive error.
	Regenerated resistance	Standard separately attached type
	Load inertia (GD ²)	See motor specifications table
	Monitor output	Speed, torque (-5 +5 [V])
	Dynamic brake	built in
	Additional functions	Testing function (jog and motorless operation), alarm history, forward and backward run, encoder signal frequency division output

4.



□ Support various type of motors

가

? Cylinder type / Pan-cake

? Large torque type / High speed type

? / /

? / (for Direct-drive)

Capacity : 50[W] ~ 15[kW]

: Absolute serial type : 11, 17, 21[bit/rev.]

Incremental type : 2000 ~ 10,000[p/rev]

□ All-in-one control

/ /

가

Pre-defined motion control (1)

4.1

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□ Upgraded Hardware spec.

TI 320C33 -150 DSP

New ASIC HIGENs

Fast Sampling Time (100[usec])

High Switching Frequency (10[kHz])

High Precision Absolute Encoder (11Bit, 17Bits, 21Bits)

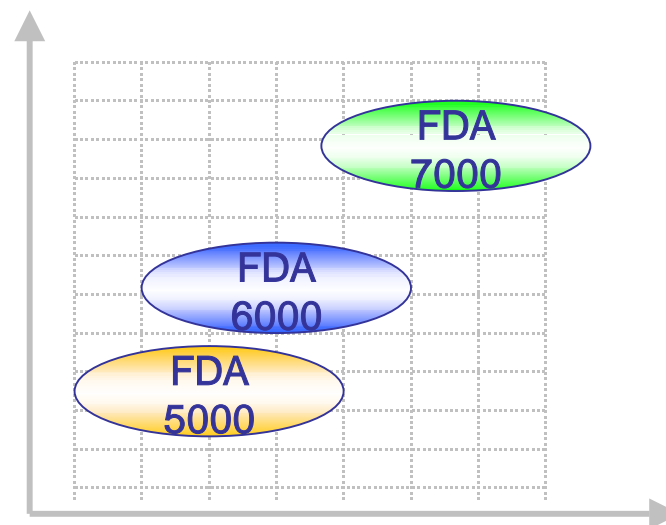
Incremental Encoder (2000PPR ~ 10000PPR)

High Resolution Analogue to Digital and Digital to Analogue

Interior Mounted Digital Loader

Arbitrary Incremental Pulse Output Function

Serial Encoder to Parallel Incremental Pulse Transformation output



4.2



- Input Output

- Input : 21 + 6 , Output : 18 + 6

- Digital Inputs (12)

SVONEN	STOP
E. STOP	ALMRST
P/PI	SPD1/GEAR1
SPD2/GEAR2	SPD3
DIR	CWLIM
CCWLIM	SPDLIM



- Digital Outputs (10)

SVONOFF	BRAKE
RDY	INSPD
SPDOUT	ALARM
PCWOUT	NCWOUT
ZSPD	PPIOUT

- Analog Commands (Speed/Torque)

- Pulse Command (6 types)

- Alarm Codes (4bit)

- Analog Monitor (2Ch/12bit)

- Pulse Output (A/B/Z)

- Position Data (serial)

4.3

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	Otis -LG		A	B	C	D	E	F
	600Hz	250Hz	550Hz	400Hz	600Hz	900Hz	600Hz	1000Hz
	10000 ppr ABS 11bit ABS 17bit ABS 21bit	6000ppr ABS 11bit	10000ppr ABS 17bit	10000ppr ABS 11bit	ABS 16bit	ABS 18bit	ABS 17bit	ABS 17bit
	RS -232 RS -485	RS -232	RS -232 RS -485	RS -232	RS -485	USB RS -422	RS -232	RS -232 RS -485
	Optional	X	SERCOS	X			Metrolink	
	○	X	○	X	○	○	○	○
가	12 (21)	12	8 (15)	14	8	9	7	8
가	10 (18)	9	6 (8)	8	5	5	4	5
2	○	X	X	X	X	○	○	○
	○	X	?	X	X	○	○	○
	(2)				?	?		
								?
	○	X	X	X	X	○	○	?
	○	X	X	X	X	X	○	X
	○	X	X	X	X	○	○	○
P -PI	○	X	○	X	X	○	○	X
PI -IP	○	X	X	X	X	X	X	X
	○	X	X	X	X	X	X	X

4.4

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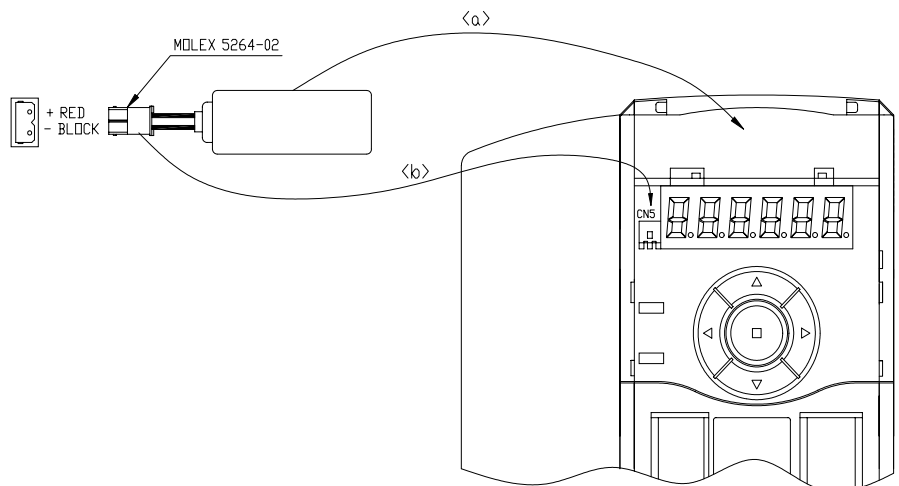


□ Mount Loader

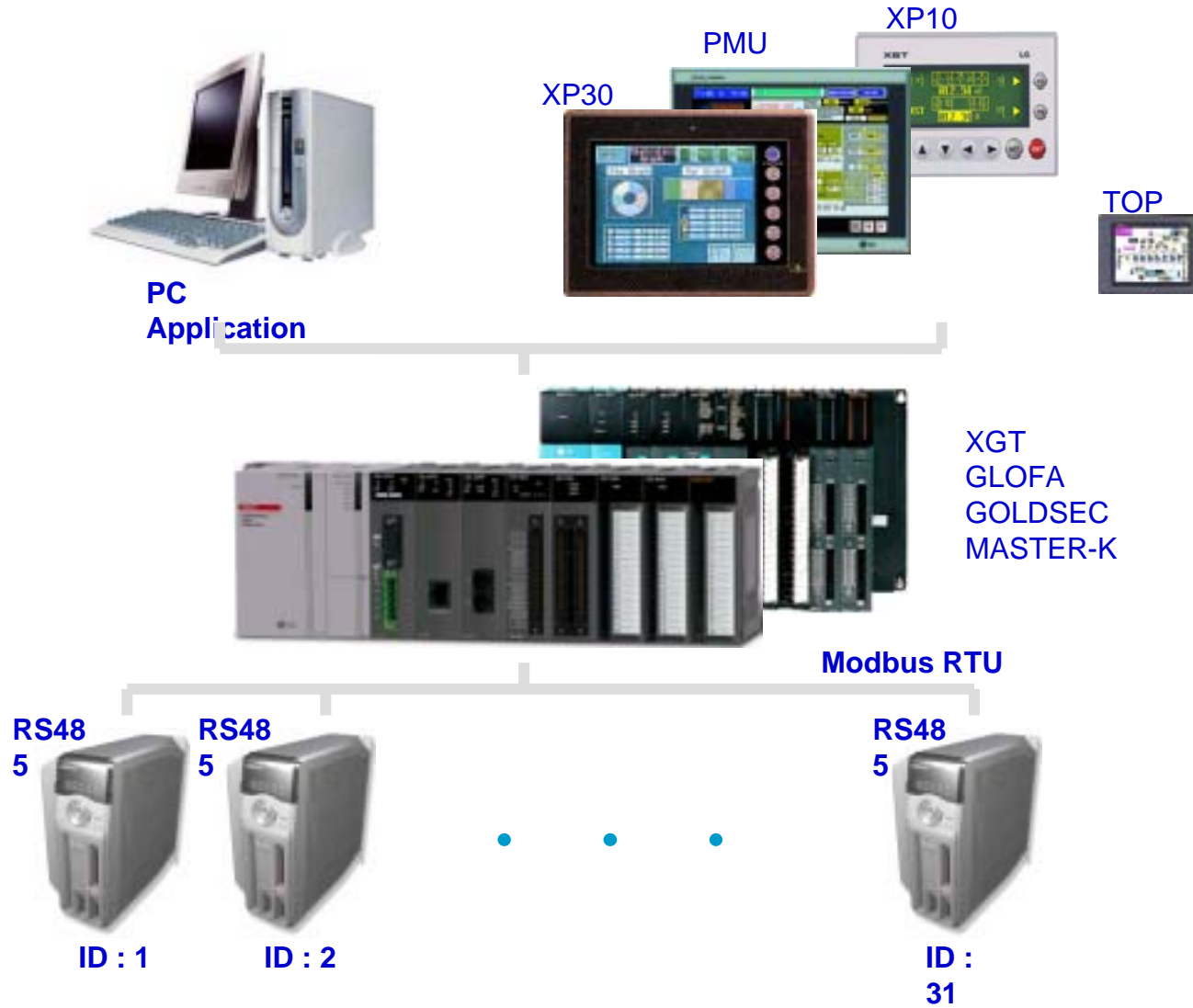
Display(such as Six 7-segments or LCD) and several Switches are mounted on the Front Panel

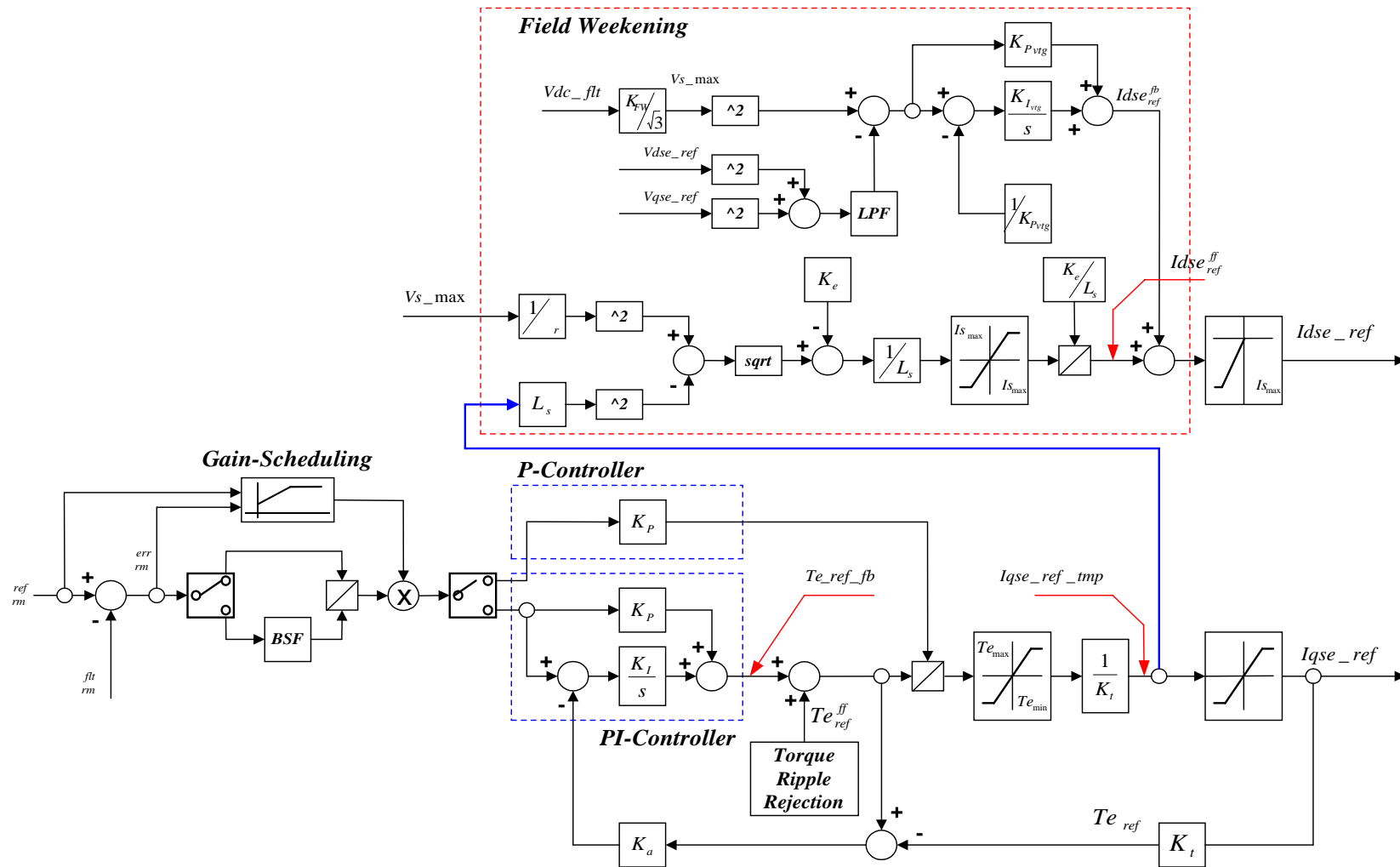
Simple operation is possible

2-LED's (for Indication of Power and Charge Status)



4.5

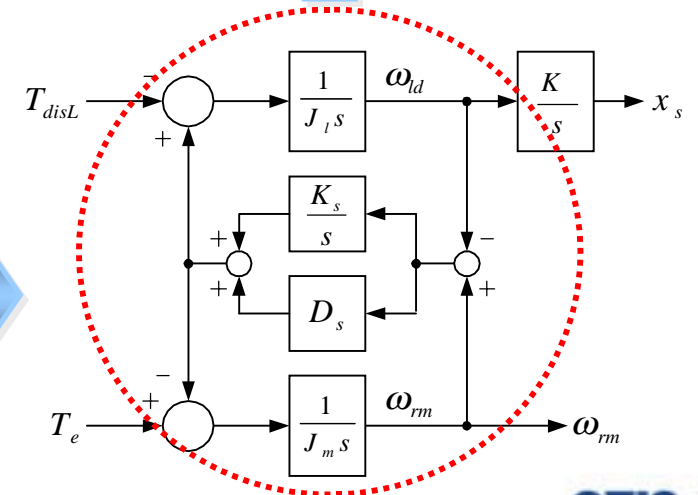
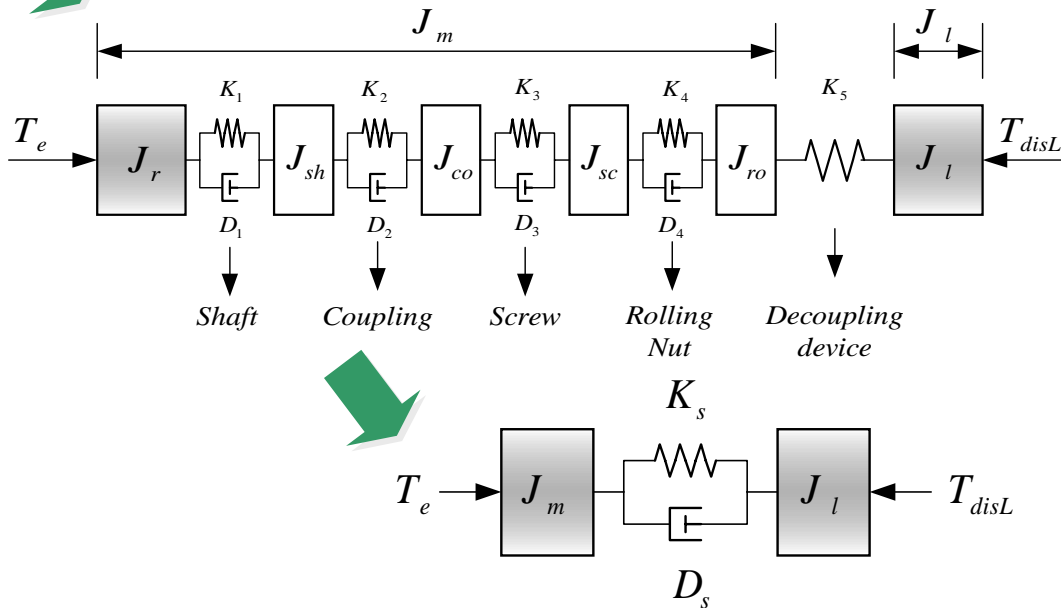
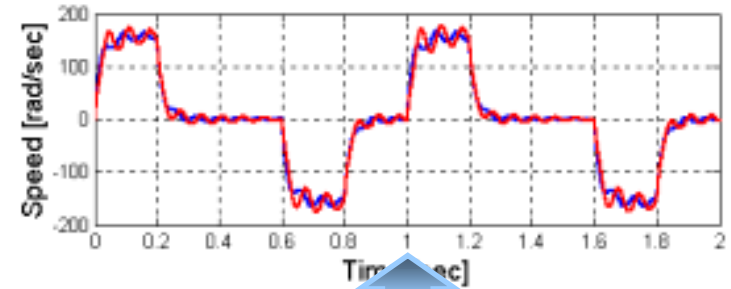
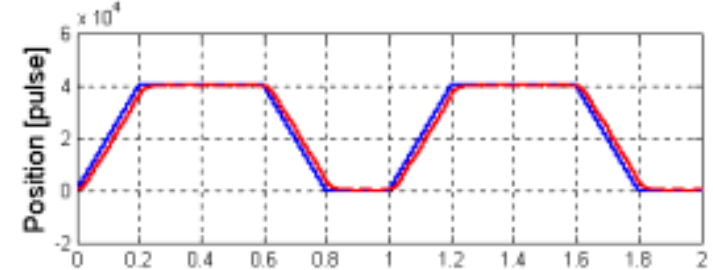
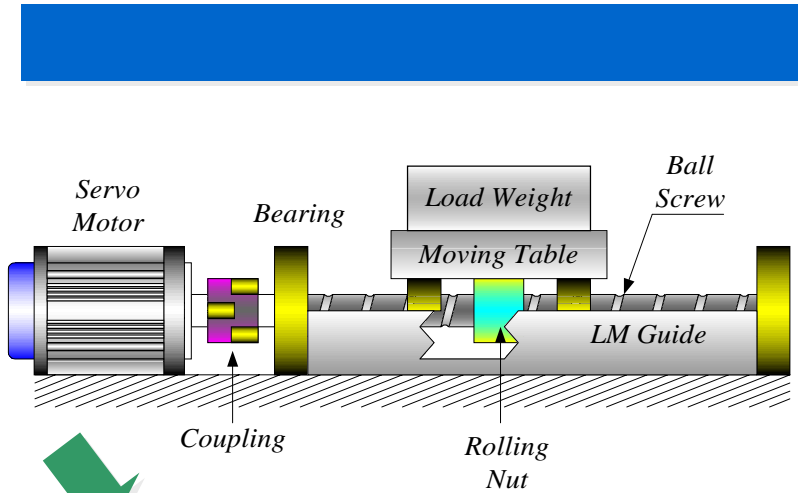




5.1



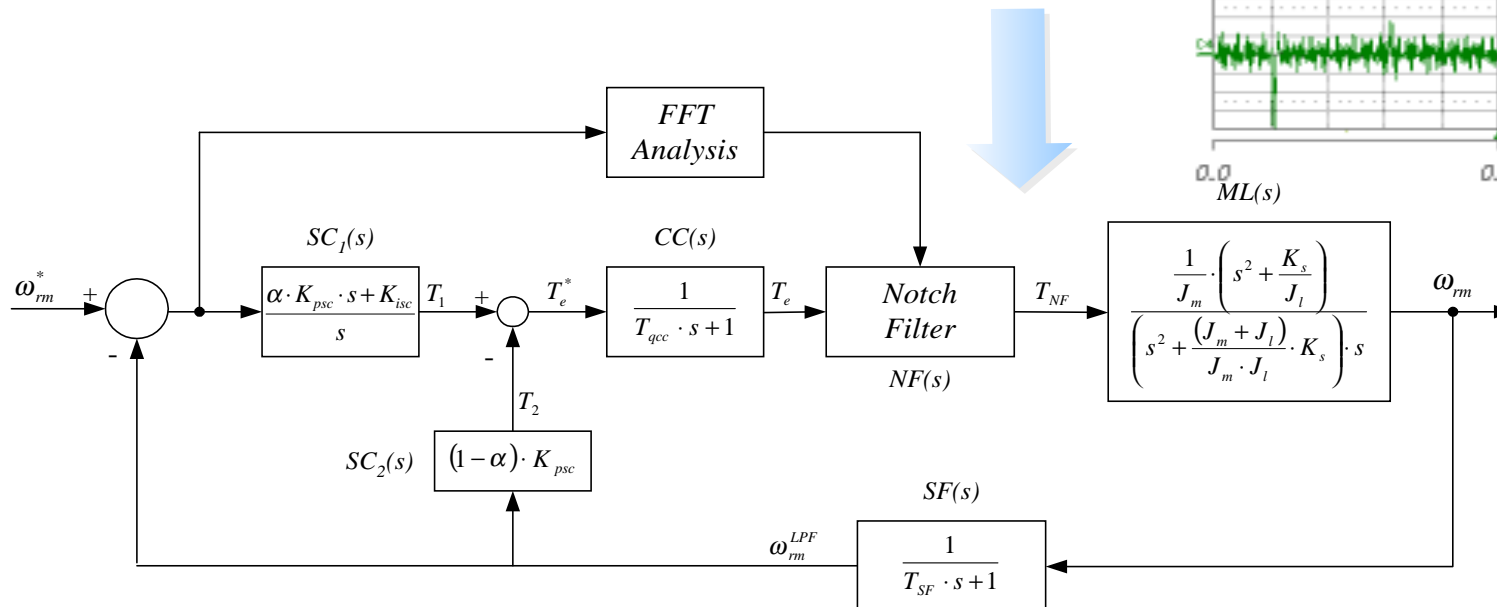
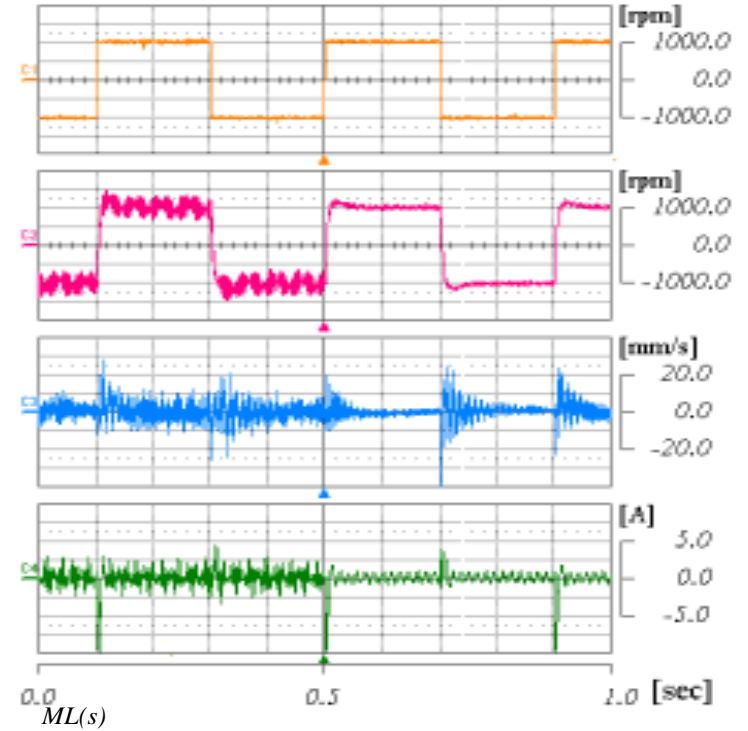
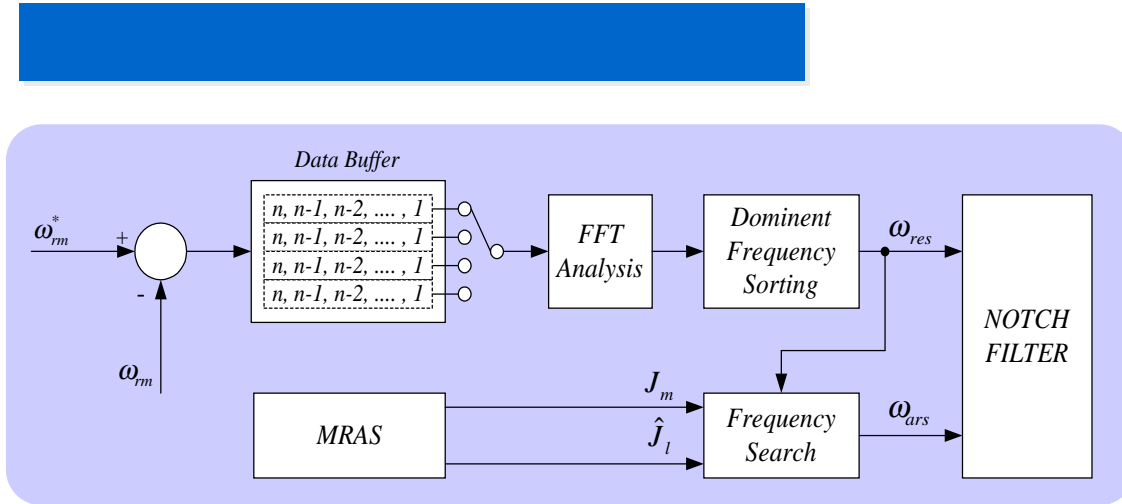
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5.2



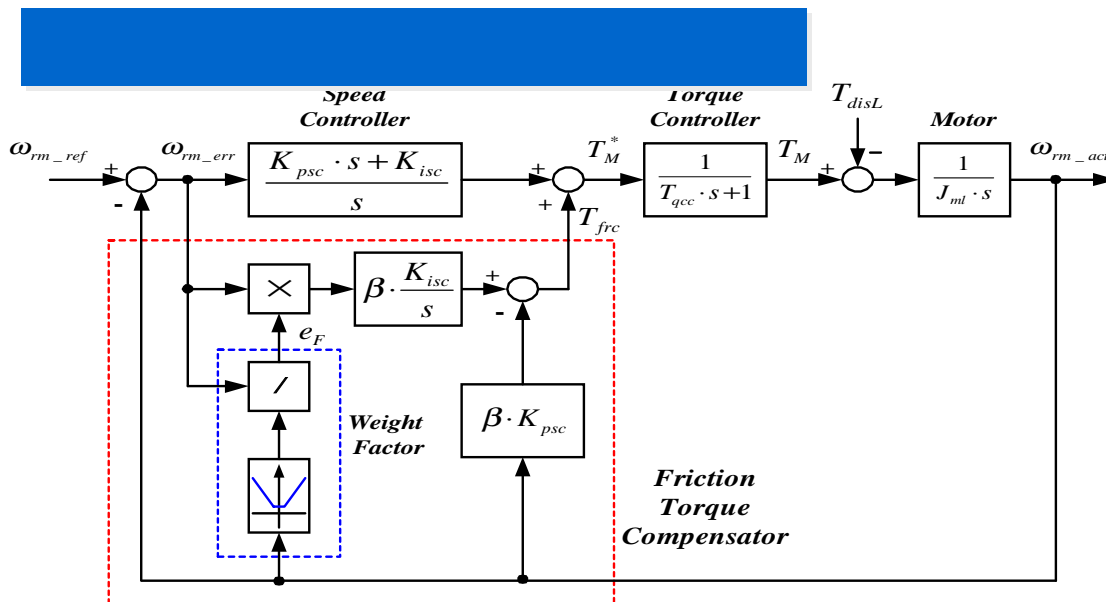
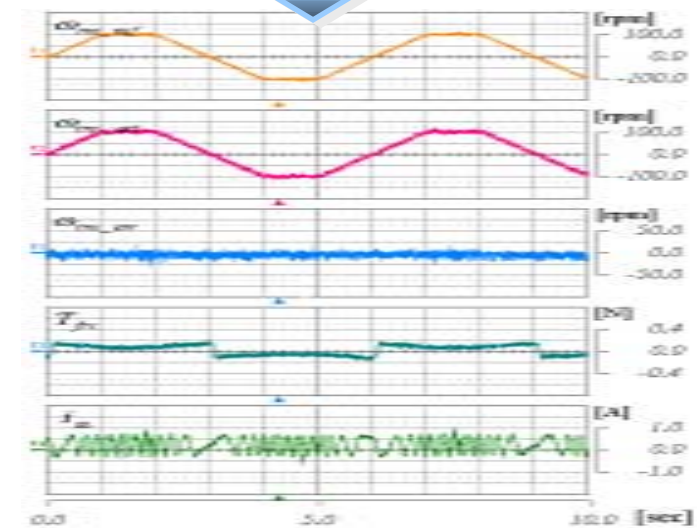
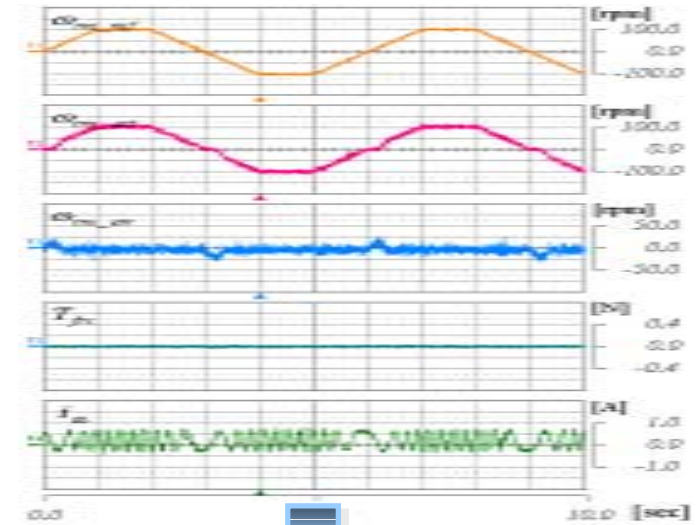
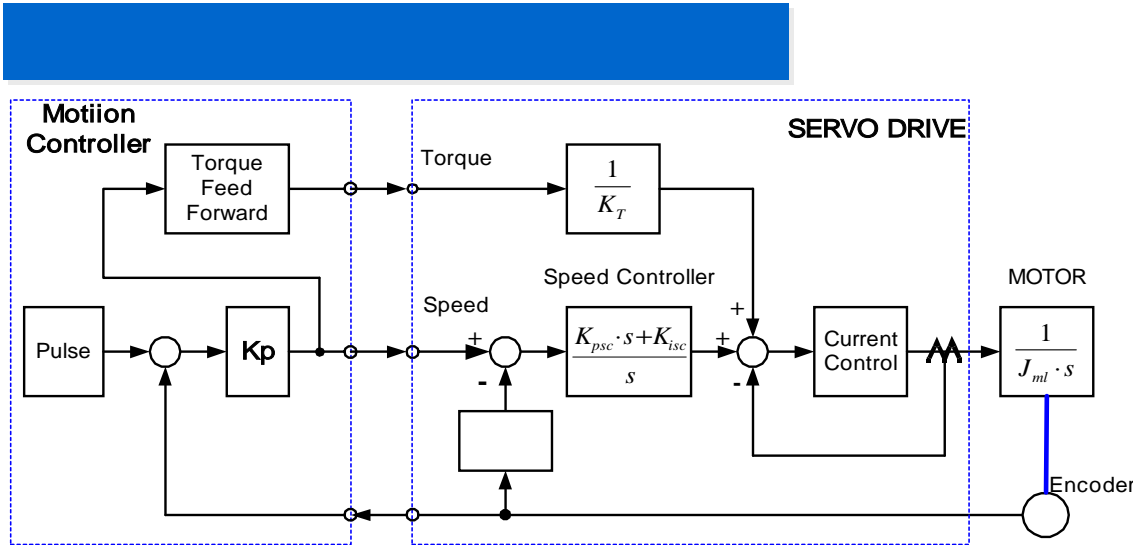
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5.3



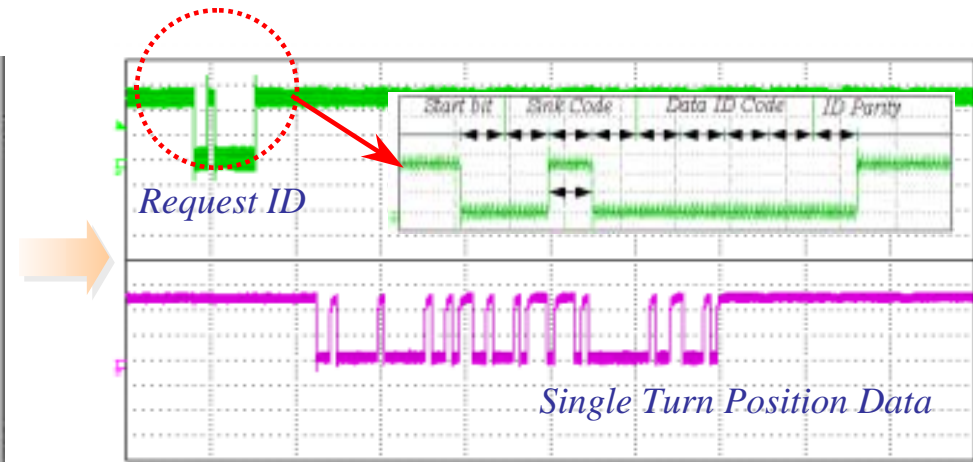
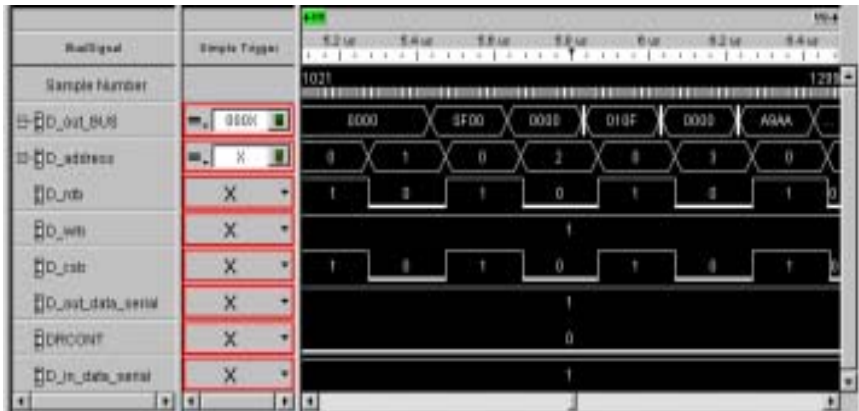
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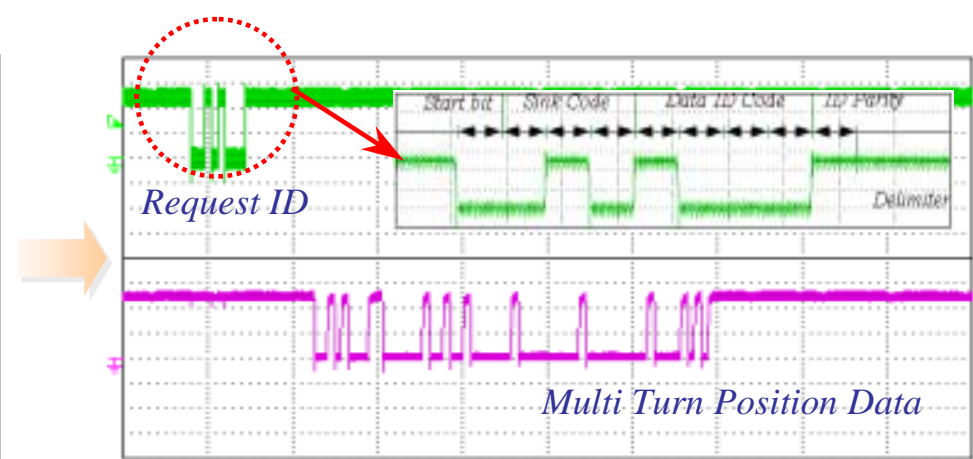
5.4



Data Waveform (ID0) : Receiver → DSP

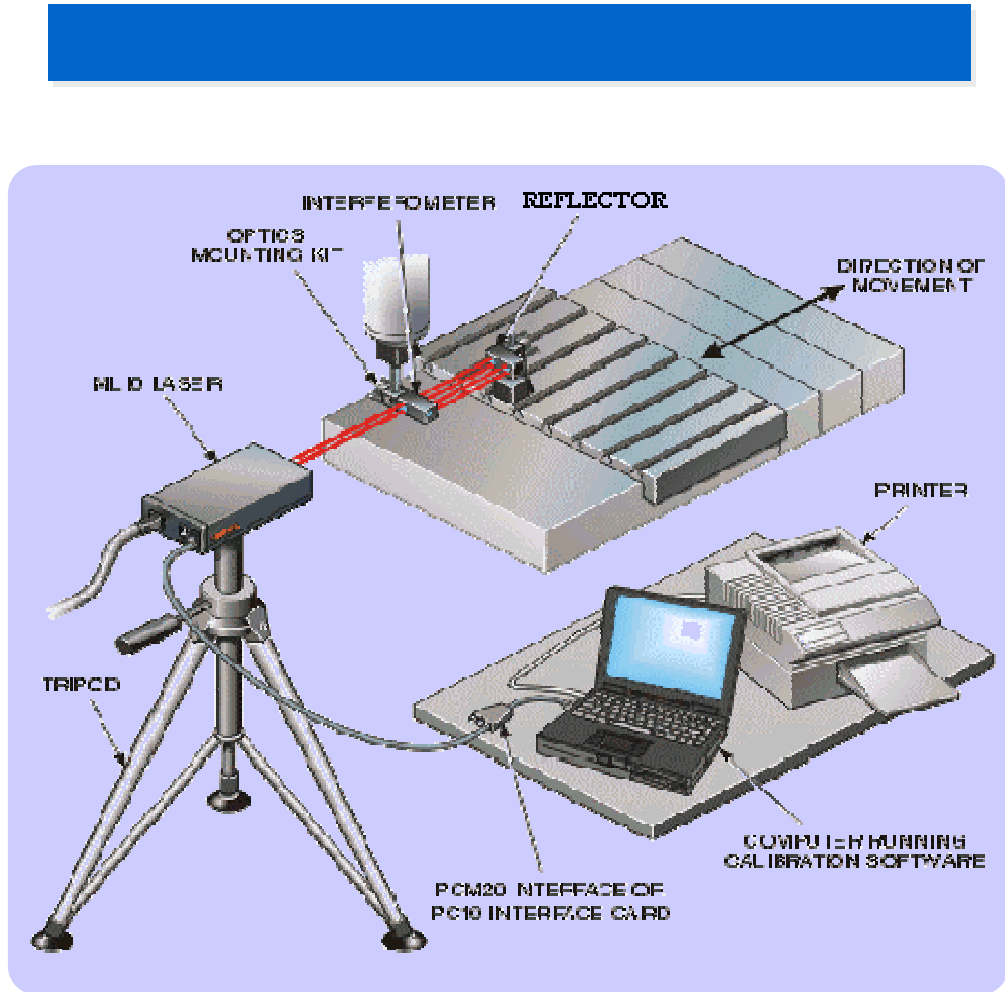


Data Waveform (ID1) : Receiver → DSP



5.5

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6. _ P

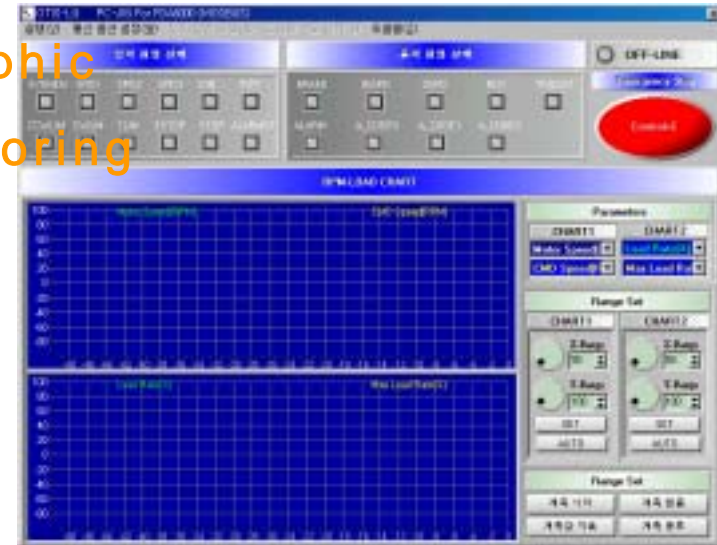
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Parameter Setting



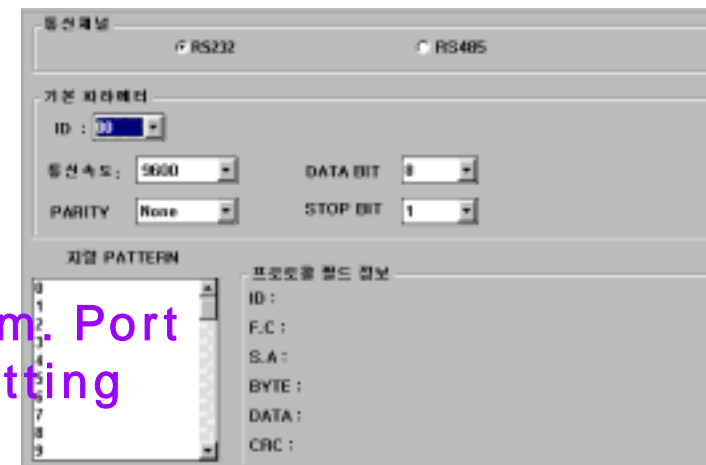
Graphic Monitoring



Digital & Analogue I/O



Comm. Port Setting



7. FDA7000 _ HIGENs

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FDA-7000 시리즈는 더욱 업그레이드 된 HIGEN^S 서보시스템 입니다.

High Performance

- 속도응답 주파수 600Hz 구현 및 17/21 bit급 시리얼 엔코더 수신기능 내장

Intelligent Control

- 2단 노치필터 공진억제 제어기와 On line 공진 주파수 분석기 내장
- 아날로그 지령 옵셋 자동 조절기능 내장

Good Design

- 미려한 외관과 Compact Size : 기존대비 32% 축소

Easy to Use

- 기계 강성에 따른 Auto tuning과 설정 후 실시간 Auto tuning (자동 게인 절환)

Network-Based System

- RS 232, RS 485 및 Adapter형 통신모듈에 의한 Digital Interface 지원

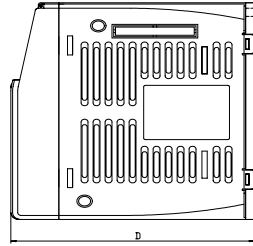
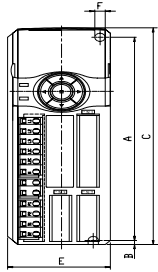
Smart Servo FDA-7000 Series

- ✓ Machine Tool, Material Handling
- ✓ Pharmaceutical Industry, Packing Machine
- ✓ Robots, Automotive Industry, AGV
- ✓ Logistics, Semiconductor Manufacturing
- ✓ Inspection Machine, Wafer/Flat Panel Transfer

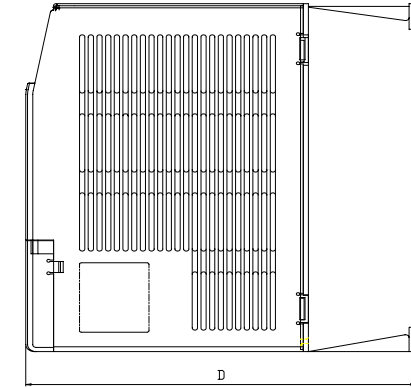
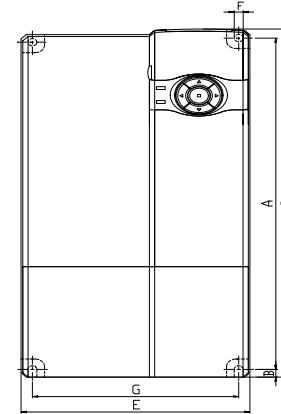


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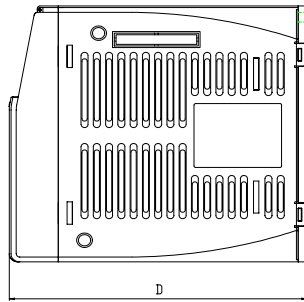
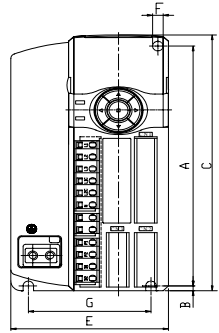
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0.05 ~ 0.3 [kW]

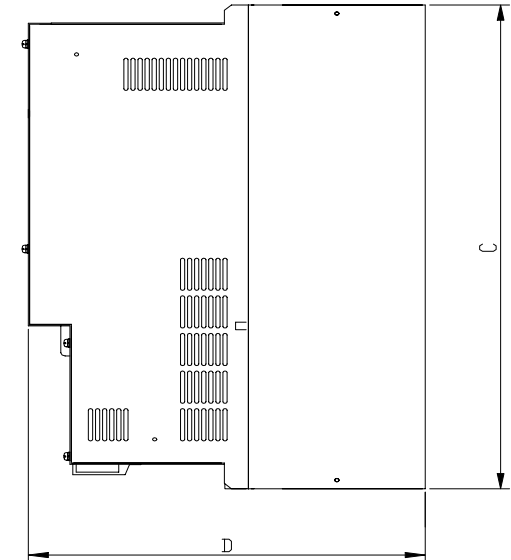
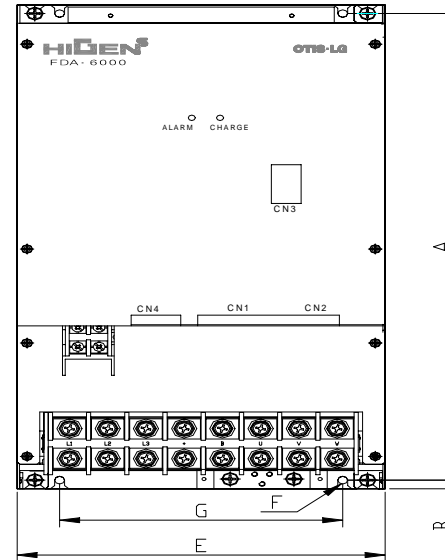


1.5 ~ 5.5 [kW]



0.04 ~ 1.0 [kW]

???	A	B	C	D	E	F	G	?? [Kg]	?? ??	??
FDA7001	150	3.0	160	140	60	6.0	-	1.0	??	???
FDA7002	150	3.0	160	140	60	6.0	-	1.0	??	???
FDA7004	150	3.0	160	170	90	6.0	70	1.5	??	???
FDA7005	150	3.0	160	170	90	6.0	70	2.0		???
FDA7010	150	3.0	160	170	90	6.0	70	2.0		???
FDA7015	239	5.5	251	225	132	5.2	119	4.5	(FAN)	???
FDA7020	239	5.5	251	225	132	5.2	119	4.8		???
FDA7030	239	5.5	251	225	132	5.2	119	4.9		???
FDA7045	239	5.5	251	225	132	5.2	119	5.0		???
FDA7075	334	8.0	350	350	240	4.0	180	15.0	???	???
FDA7110	434	12.5	450	280.5	260	7.0	200	23.0		???
FDA7150	434	12.5	450	280.5	260	7.0	200	24.0		???



7.5 ~ 15.0 [kW]



Thank You !

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