

AUTOMATION ENGINEERING & INDUSTRIAL SUPPLIES

Stockiest & Distribution Factory Automation Solution Customized Gear Reducer
 Precision Servo Drive Precision ServoBox AC Gear Motor & Inverter

AUTHORISED DISTRIBUTOR AND AGENCY :



ABOUT US : **ORIENTAL DM SDN BHD**

(891429-K)

Sales & Distribution of industrial products since **2010**

1

LDS High Precision Servobox, AC Electric Gear Motor, Servo Drives, Frequency Inverter & Middleware Integration.

2

Subang USJ 1: Dedicated Personnel for Sales & Technical Support

Business Philosophy :
Integrity + Professional + Sharing

3

Industrial Stockiest & Distributor

Final QC @ USJ 1

In-house assembly + functional testing before delivery + product repair + engineering advice and solution

4

Comprehensive design + configuration + accessories

Standard + Customized Solution
Gear reduction ratio to 1/24,400

5

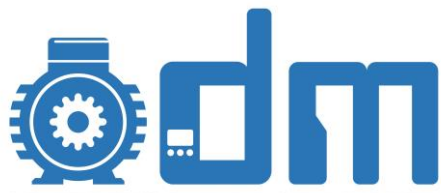
Provide Quick-Start Guideline for ease of use and setting of Inverter

Step by step guidance in Parameter Setting and Wiring to control devices and switches

6

LDS entitled to 12-month Manufacturer Warranty

* LDS products are compatible with major industry players
* Competitive product supply + Cost saving solution



ORIENTAL DM SDN BHD

SUBANG USJ 1, SELANGOR

TEL : 012-380 9960

www.oriental-dm.com



Subang Factory



Taichung factory (est. 1970)



ABOUT OUR PRODUCTS & SERVICES



LDS Precision Servo Gear Reducer (for up to 30kW Servo Motor)

Low Backlash Planetary ServoBox, Hypoid & Spiral Bevel ServoBox, Rotary Flange and Rotary Actuator ServoBox, Worm Gear ServoBox, Robonic Drive (HarmonicDrive), Cyko Drive (Cyclo Drive)



NIDEC Control Techniques Precision Servo Drive

Digitax SF (50W~2kW) : Analogue, Pulse Train and EtherCAT interface
17bit Encoder Resolution

Digitax HD (250W~7.5kW) : Up to 25bit encoder, Multi-protocol Ethernet (EtherNet RTMoE, EtherNet/IP, Modbus TCP/IP, PROFINET RT)



LDS Compact Gear Motor 6W ~ 250W

Induction & Reversible Motor, Speed Control Motor, Inverter Motor, Electromagnetic Brake Motor, Clutch & Brake Motor
c/w Parallel Shaft Gearhead, Spiral Bevel and Worm Gearhead



LDS Small Gear Motor (AC) 0.2kW ~ 2.2kW

1 phase and 3phase Helical Gear Motor, Worm Gear Motor, Helical Hypoid Gear Motor, IEC Asynchronous Motor
* MarelliMotori Asynchronous Motor up to 200kW



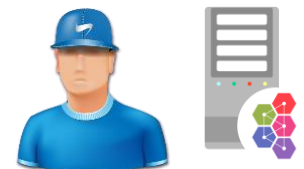
CONTROL TECHNIQUES INVERTER 0.4k ~ 900kW

Commander S100 : Mobile NFC enabled Inverter (Android / iOS)
NE200 and NE300 : Large Capacity Frequency Inverter
Mitsubishi Inverter & Panasonic Inverter



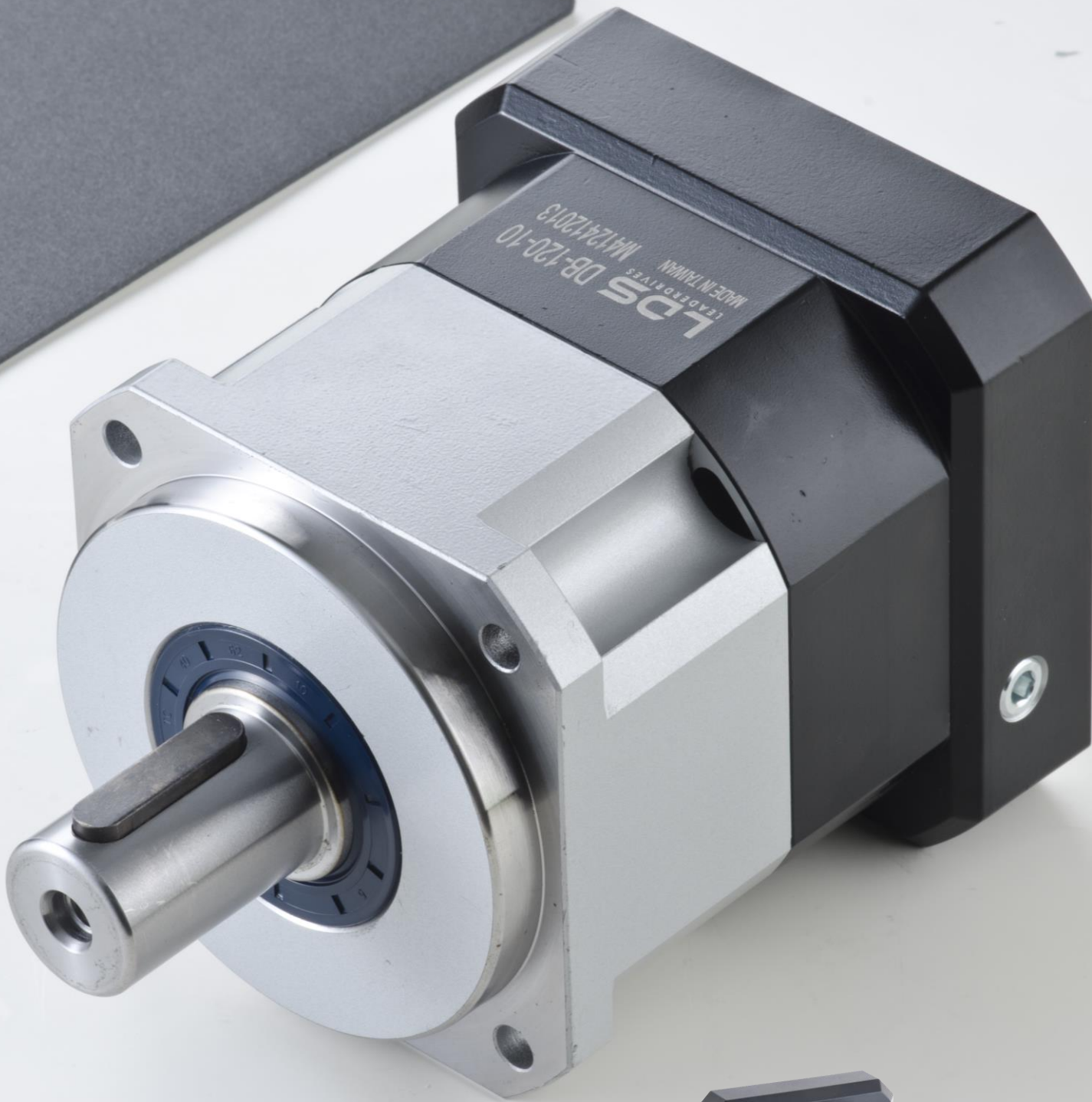
Industrial Engineering and Factory Automation

Gear Reducer Customisation
Servo Drive Conversion and upgrade
Middleware Integration (PC base)
Belt Conveyor Service and Repair



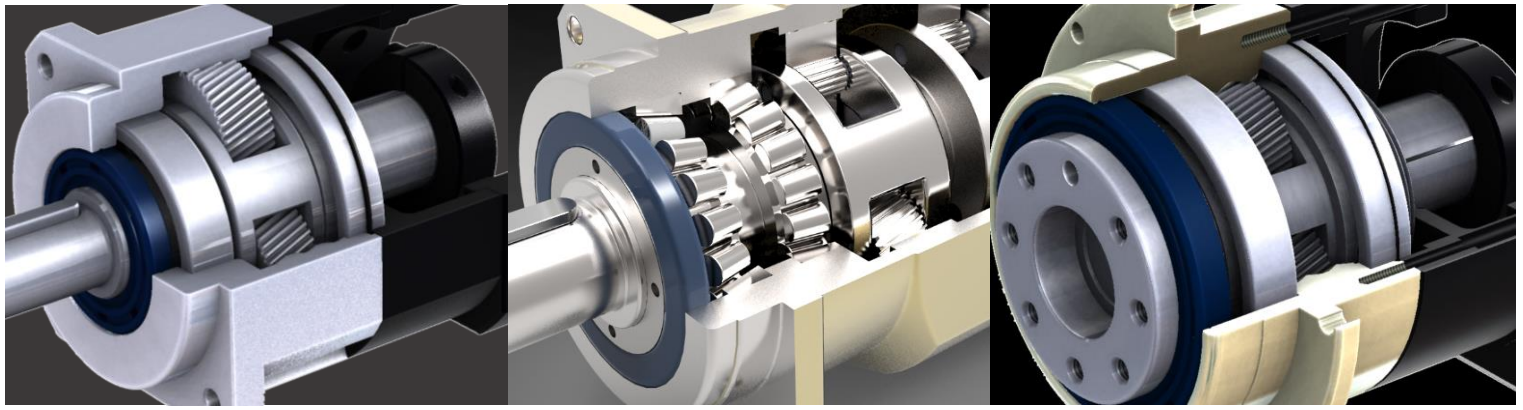
AUTHORISED DISTRIBUTOR AND AGENCY :





LDS
LEADERDRIVES

PRECISION SERVO GEAR REDUCER
HIGH REPEATABILITY ACCURACY | IP65



INLINE PRECISION SERVOBOX SERIES

FOR SERVO MOTOR RATING 50W TO 30KW

BENEFITS OF USING PRECISION SERVOBOX

- Enhances output torque level to achieve optimal performance.
- Energy-saving when smaller servo motor capacity is applied.
- Increases level of inertia output (reduces inertia mismatch).
- Absorbs higher radial or axial forces of the application.
- Achieves more stable operation at low-speed setting.

LDS SERVOBOX FEATURES

- Compatible with major servo motor makers globally : Mitsubishi, Nidec, Omron, OrientalMotor, Panasonic, Yaskawa, Allen Bradley, Beckhoff, B&R, Festo, Kuka, Siemens Simotics.
- Offer direct replacement for servobox : Apex Dynamics, Nidec Shimpo, Neugart, Wittenstein, ATG and ABB.
- Precision servobox design : Backlash : $1 \leq 12$ arcmin.
- Gear reduction ratio from 1/1 to 1/1000.
- Rated output torque up to 8790Nm.
- High repeatability accuracy.
- IP65 enclosure protection.
- Maintenance-free design.



DB | CSB Series
Helical Planetary Gear ServoBox



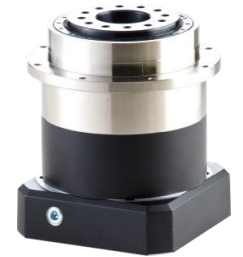
SE Series
Helical Planetary Gear ServoBox (Foot Mount)



LM ROBONIC Series
Compact Zero Backlash Strain Wave Gear ServoBox



LM CYKO DRIVE Series
Cyclo Gear ServoBox (High Shock-Load Capacity)



SD | CSD Series
Rotary Flange Helical Planetary Gear ServoBox



PE Series
Ultra Compact Helical Planetary Gear ServoBox



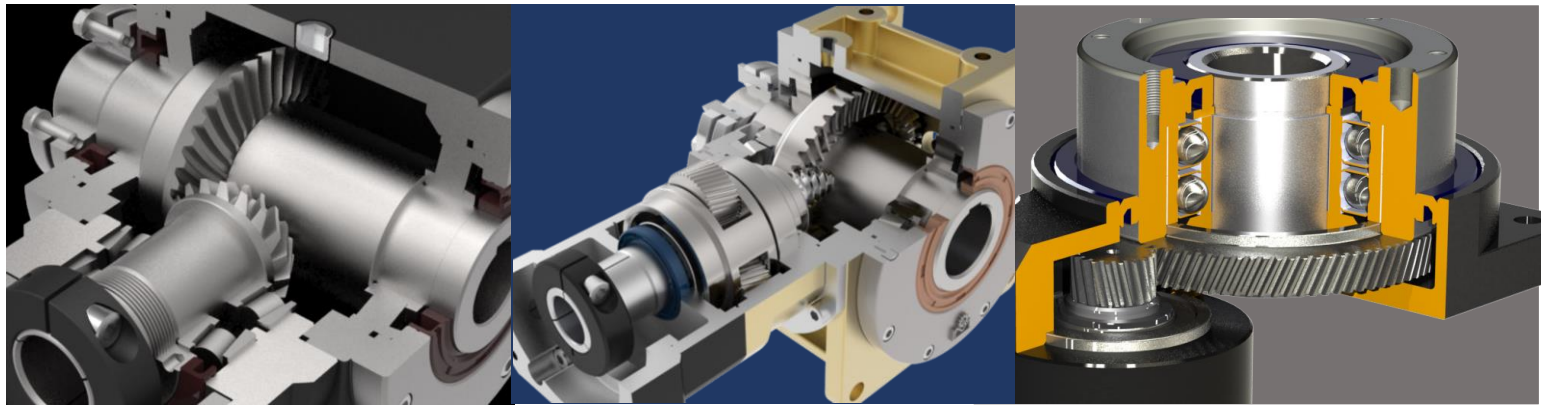
SN Series
Helical Planetary Gear ServoBox



FA Series
Helical Planetary Gear ServoBox

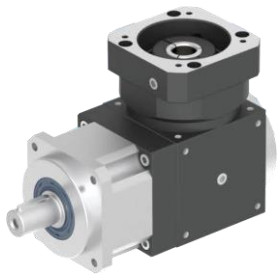


SF Series
High Radial & Axial Force ServoBox



RIGHT ANGLE PRECISION SERVOBOX SERIES

FOR SERVO MOTOR RATING 50W TO 30KW



PBT | CSBT Series
Helical Planetary and
Spiral Gear ServoBox



DBL | CSBL Series
Helical Planetary Gear
ServoBox



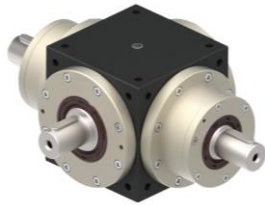
HY Series
Hypoid Gear ServoBox
(Alloy Steel Housing)



HY-DP Series
Hypoid Gear ServoBox
(for ball screw operation)



ST | CST Series
Spiral Bevel Gear ServoBox
(Hollow or Solid Output Shaft)



ST-YV Series
Spiral Bevel Gear ServoBox
with Multiple Axis



FT Series
Ultra Compact Spiral Bevel
Gear ServoBox



SDH Series
Rotary Output Flange
Helical Hypoid ServoBox



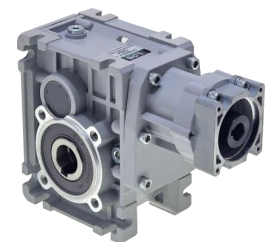
GT Series
Hollow Rotary Actuator
(Hollow Table) ServoBox



HK Series
Hollow Rotary Flange
(Hollow Table) ServoBox



DMRS-CM Series*
Worm Gearbox
(Non-Precision)



OTS-CM Series*
Helical Hypoid Gearbox
(Non-Precision)



PLANETARY SERVOBOX

DB SERIES UNIVERSAL DESIGN HIGH PRECISION



High Precision Planetary ServoBox in compact design and universal housing with precision bearings and planetary gearing provides high torque density while offering high positioning performance.

- DB Series 1-Stage Planetary ServoBox in Gear Reduction Ratio 1/3 to 1/10
- DB-A Series 2-Stage Planetary ServoBox in Gear Reduction Ratio 1/15 to 1/100
- DB Series 3-Stage Planetary ServoBox in Gear Reduction Ratio 1/125 to 1/1000

GENERAL SPECIFICATIONS	Unit	Ratio	Model : DB & DB-A Series								
			#44	#62	#90	#120	#142	#180	#220	#270	#330
Frame Size	MM	3~10	44x44	62x62	90x90	120x120	142x142	180x180	220x220	270x270	330x330
Mounting PCD	MM	3~10	∅50	∅70	∅100	∅130	∅165	∅215	∅250	∅300	∅380
Output Shaft Diameter	MM	3~10	∅13	∅16	∅22	∅32	∅40	∅55	∅75	∅85	∅100
Output Shaft Length	MM	3~10	20	28	36	50	74	82	104	130	140
Rated Output Torque Capacity (1-Stage ServoBox)	Nm	Ratio 3	19	59	165	335	625	1,206	2,030	4,770	8,790
		Ratio 4	16	51	146	300	555	1,069	1,804	4,730	8,730
		Ratio 5	16	48	160	333	618	1,189	2,010	4,680	8,660
		Ratio 6	15	45	151	311	583	1,118	1,911	--	--
		Ratio 7	15	45	149	309	573	1,108	1,870	4,570	8,520
		Ratio 8	14	43	143	298	553	1,070	1,824	--	--
		Ratio 9	13	44	145	278	516	993	1,694	--	--
		Ratio 10	14	43	141	294	549	1,059	1,779	4,420	8,310
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 15	19	59	165	335	625	1,206	2,030	4,770	8,790
		Ratio 20	16	51	146	300	555	1,069	1,804	4,730	8,730
		Ratio 25	16	48	160	333	618	1,189	2,010	4,680	8,660
		Ratio 30	15	45	151	311	583	1,118	1,911	4,620	8,610
		Ratio 35	15	45	149	309	573	1,108	1,870	4,570	8,520
		Ratio 40	14	43	143	298	553	1,070	1,824	4,520	8,440
		Ratio 50	16	48	160	333	618	1,189	2,010	4,680	8,660
		Ratio 60	15	45	151	311	583	1,118	1,911	--	--
		Ratio 70	15	45	149	309	573	1,108	1,870	4,570	8,520
		Ratio 80	14	43	143	298	553	1,070	1,824	--	--
Ratio 90	13	44	145	278	516	993	1,694	--	--		
Ratio 100	14	43	141	294	549	1,059	1,779	4,420	8,310		
Max. Acceleration Torque	Nm	3~100	1.8 Times of Rated Output Torque								
Max. Output Torque Emergency Stop Torque	Nm	3~100	3 Times of Rated Output Torque								
Rated Input Speed	RPM	3~100	3,000	3,000	3,000	3,000	3,000	3,000	2,000	2,000	2,000
Maximum Input Speed	RPM	3~100	6,000	6,000	6,000	6,000	6,000	6,000	4,000	3,000	3,000
Backlash (arcmin)	PS	3~100	-	-	≤ 1arcmin	≤ 1arcmin	≤ 1arcmin	≤ 1arcmin	≤ 1arcmin	≤ 3arcmin	≤ 3arcmin
	P0 / P1 / P2	3~100	P0 ≤ 3arcmin ▪ P1 ≤ 5arcmin ▪ P2 ≤ 7arcmin								
Torsional Rigidity	Nm/arcmin	3~100	3	6	14	27	60	140	240	140	220
Maximum Radial Force	N	3~100	380	1180	3,200	6,800	9,300	15,600	51,000	107,100	224,910
Maximum Axial Force	N	3~100	190	590	1,600	3,400	4,650	7,800	25,500	53,550	112,455
Service Life	Hr	3~100	Intermittent Periodic Duty S5 > 30,000 hours Continuous Duty S1 > 15,000 hours								
Efficiency	%	3~100	1-stage : ≥ 97% 2-stage : ≥ 94%								
Operating Temperature	°C	3~100	-25°C ~ +90°C								
Lubrication		3~100	Synthetic oil								
Degree of Protection		3~100	IP65								
Mounting Position		3~100	Any								
Noise Level	dB(A)	3~100	≤ 56	≤ 58	≤ 60	≤ 63	≤ 65	≤ 67	≤ 70	≤ 72	≤ 74



PLANETARY SERVOBOX

DB-A SERIES

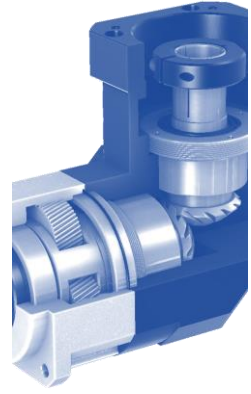
**UNIVERSAL DESIGN
HIGH PRECISION**



Features :

- Most cost effective in-line planetary servobox design.
- Precise (low backlash between 1~12arcmin).
- High torque capability and torsional stiffness.
- Gear Reduction Ratio up to 1/1000 (3Stage).
- Universal housing and is suitable for all servo and stepper applications.

GENERAL SPECIFICATIONS	Unit	Ratio	Model : DB-A (2 Stage)						
			#44A	#62A	#90A	#120A	#142A	#180A	#220A
Frame Size	MM	15~100	44 x 44	62 x 62	90 x 90	120 x 120	142 x 142	180 x 180	220 x 220
Mounting PCD	MM	15~100	Ø50	Ø70	Ø100	Ø130	Ø165	Ø215	Ø250
Output Shaft Diameter	MM	15~100	Ø13	Ø16	Ø22	Ø32	Ø40	Ø55	Ø75
Output Shaft Length	MM	15~100	20	28	36	50	74	82	104
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 15	19	59	165	335	625	1,206	2,030
		Ratio 20	16	51	146	300	555	1,069	1,804
		Ratio 25	16	48	160	333	618	1,189	2,010
		Ratio 30	15	45	151	311	583	1,118	1,911
		Ratio 35	15	45	149	309	573	1,108	1,870
		Ratio 40	14	43	143	298	553	1,070	1,824
		Ratio 50	16	48	160	333	618	1,189	2,010
		Ratio 60	15	45	151	311	583	1,118	1,911
		Ratio 70	15	45	149	309	573	1,108	1,870
		Ratio 80	14	43	143	298	553	1,070	1,824
		Ratio 90	13	44	145	278	516	993	1,694
Ratio 100	14	43	141	294	549	1,059	1,779		
Max. Acceleration Torque	Nm	15~100	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	Nm	15~100	3 Times of Rated Output Torque						
Rated Input Speed	RPM	15~100	3,000	3,000	3,000	3,000	3,000	3,000	2,000
Maximum Input Speed	RPM	15~100	6,000	6,000	6,000	6,000	6,000	6,000	4,000
Backlash (arcmin)	PS	15~100	-	-	≤ 3arcmin	≤ 3arcmin	≤ 3arcmin	≤ 3arcmin	≤ 3arcmin
	P0 / P1 / P2	15~100	P0 ≤ 5arcmin ▪ P1 ≤ 7arcmin ▪ P2 ≤ 9arcmin						
Torsional Rigidity	Nm/arcmin	15~100	3	6	14	27	60	140	240
Maximum Radial Force	N	15~100	380	1180	3,200	6,800	9,300	15,600	51,000
Maximum Axial Force	N	15~100	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	Hr	15~100	Intermittent Periodic Duty S5 > 30,000 hours Continuous Duty S1 > 15,000 hours						
Efficiency	%	15~100	≥ 94%						
Operating Temperature	°C	15~100	-25°C ~ +90°C						
Lubrication		15~100	Synthetic oil						
Degree of Protection		15~100	IP65						
Mounting Position		15~100	Any						
Noise Level	dB(A)	15~100	≤ 58	≤ 60	≤ 63	≤ 65	≤ 67	≤ 70	≤ 72
Weight ± 3%	Kg	15~100	0.9	2	5.5	11	21	42	59

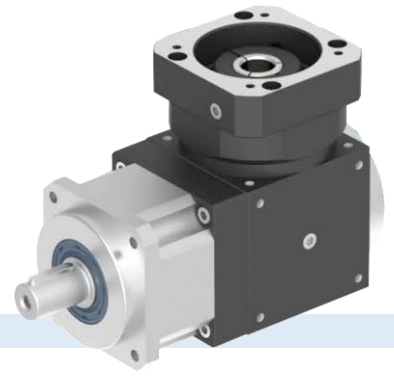


PLANETARY SERVOBOX

PBT

SERIES

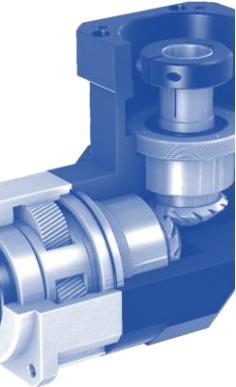
RIGHT ANGLE PLANETARY SOLUTION HELICAL GEAR & SPIRAL BEVEL GEAR



Spiral Bevel Gear ServoBox offer more compact right-angle solution and universal housing with precision bearings planetary gearing provides high torque density while offering high positioning performance.

- PBT Series in Gear Reduction Ratio 1/3 to 1/50.

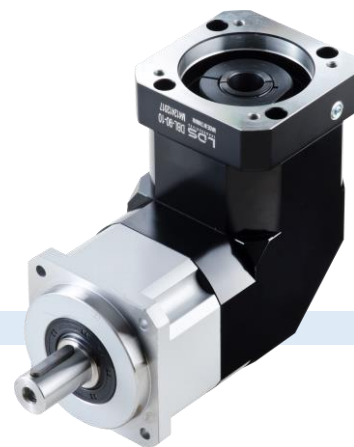
GENERAL SPECIFICATIONS	Unit	Ratio	Model : PBT (1 Stage)						
			#44	#62	#90	#120	#142	#180	#220
Frame Size	MM	3~50	44x44	62x62	90x90	120x120	142x142	180x180	220 x 220
Mounting PCD	MM	3~50	Ø50	Ø70	Ø100	Ø130	Ø165	Ø215	Ø250
Output Shaft Diameter	MM	3~50	Ø13	Ø16	Ø22	Ø32	Ø40	Ø55	Ø75
Output Shaft Length	MM	3~50	20	28	36	50	74	82	104
Rated Output Torque Capacity	Nm	Ratio 3	17	54	145	301	553	1,067	1,786
		Ratio 4	15	48	128	269	491	940	1,587
		Ratio 5	14	45	132	278	510	1,050	1,770
		Ratio 6	13	41	125	252	466	985	1,680
		Ratio 7	13	41	123	258	473	975	1,645
		Ratio 8	12	39	115	241	442	942	1,605
		Ratio 9	11	40	120	227	412	875	1,490
		Ratio 10	14	45	132	278	510	1,050	1,565
		Ratio 15	14	45	132	278	510	1,050	1,786
		Ratio 20	14	45	132	278	510	1,050	1,587
		Ratio 25	14	45	132	278	510	1,050	1,770
		Ratio 30	13	41	125	252	466	965	1,680
		Ratio 35	13	41	123	258	473	975	1,645
Ratio 40	12	39	115	241	442	942	1605		
Ratio 50	12	40	116	246	452	930	1,565		
Max. Acceleration Torque	Nm	3~50	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	Nm	3~50	3 Times of Rated Output Torque						
Rated Input Speed	RPM	3~50	3,000	3,000	3,000	2,500	2,500	2,000	2,000
Maximum Input Speed	RPM	3~50	6,000	6,000	5,000	4,500	3,500	3,000	3,000
Backlash (arcmin)	P2	3~50	P2 ≤ 10arcmin						
Torsional Rigidity	Nm/arcmin	3~50	3	6	14	27	60	140	240
Maximum Radial Force	N	3~50	360	1,120	3,040	6,460	8,830	14,820	48,450
Maximum Axial Force	N	3~50/180	180	560	1,520	3,230	4,410	7,410	24,225
Service Life	Hr	3~50	Intermittent Periodic Duty S5 > 20,000 hours Continuous Duty S1 > 10,000 hours						
Efficiency	%	3~50	≥ 95%						
Operating Temperature	°C	3~50	-25°C ~ +90°C						
Lubrication		3~50	Synthetic oil						
Degree of Protection		3~50	IP65						
Mounting Position		3~50	Any						
Noise Level	dB(A)	3~50	≤ 65	≤ 68	≤ 70	≤ 72	≤ 74	≤ 76	≤ 76
Weight ± 3%	Kg	3~50	1.4	2.2	7.1	13	24	48	78



PLANETARY SERVOBOX

DBL SERIES

RIGHT ANGLE PLANETARY SOLUTION UNIVERSAL DESIGN

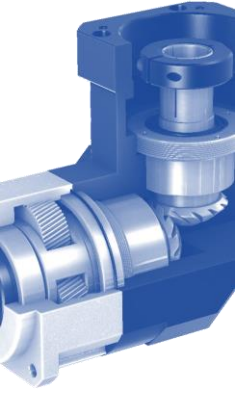


High Precision Planetary ServoBox in right-angle solution and universal housing with precision bearings planetary gearing provides high torque density while offering high positioning performance.

- DBL Series 1-Stage Planetary ServoBox in Gear Reduction Ratio 3 ~ 20.
- DBL-A Series 2-Stage Planetary ServoBox in Gear Reduction Ratio 25 ~ 200.

GENERAL SPECIFICATIONS	Unit	Ratio	Model : DBL (1 Stage)						
			#44	#62	#90	#120	#142	#180	#220
Frame Size	MM	3~20	44 x 44	62 x 62	90 x 90	120 x 120	142 x 142	180 x 180	220 x 220
Mounting PCD	MM	3~20	Ø50	Ø70	Ø100	Ø130	Ø165	Ø215	Ø250
Output Shaft Diameter	MM	3~20	Ø13	Ø16	Ø22	Ø32	Ø40	Ø55	Ø75
Output Shaft Length	MM	3~20	20	28	36	50	74	82	104
Rated Output Torque Capacity (1-Stage ServoBox)	Nm	Ratio 3	19	59	165	335	625	1,206	2,030
		Ratio 4	16	51	146	300	555	1,069	1,804
		Ratio 5	16	48	160	333	618	1,189	2,010
		Ratio 6	15	45	151	311	583	1,118	1,911
		Ratio 7	15	45	149	309	573	1,108	1,870
		Ratio 8	14	43	143	298	553	1,070	1,824
		Ratio 9	13	44	145	278	516	993	1,694
		Ratio 10	13	43	141	294	549	1,059	1,179
		Ratio 12	15	45	151	311	583	1,118	1,911
		Ratio 14	15	45	149	309	573	1,108	1,870
		Ratio 16	14	43	143	298	553	1,070	1,824
		Ratio 18	13	44	145	278	516	993	1,694
Ratio 20	14	43	141	294	549	1,059	1,779		
Max. Acceleration Torque	Nm	3~20	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	Nm	3~20	3 Times of Rated Output Torque						
Rated Input Speed	RPM	3~20	3,000	3,000	3,000	3,000	3,000	3,000	2,000
Maximum Input Speed	RPM	3~20	6,000	6,000	6,000	5,000	5,000	4,000	3,000
Backlash (arcmin)	PS	3~20	-	-	≤ 2arcmin	≤ 2arcmin	≤ 2arcmin	≤ 2arcmin	≤ 2arcmin
	P0 / P1 / P2	3~20	P0 ≤ 4arcmin ▪ P1 ≤ 6arcmin ▪ P2 ≤ 8arcmin						
Torsional Rigidity	Nm/arcmin	3~20	3	6	14	27	60	140	240
Maximum Radial Force	N	3~20	360	1,120	3,040	6,460	8,830	14,820	48,450
Maximum Axial Force	N	3~20	180	560	1,520	3,230	4,410	7,410	24,225
Service Life	Hr	3~20	Intermittent Periodic Duty S5 > 30,000 hours Continuous Duty S1 > 15,000 hours						
Efficiency	%	3~20	≥ 94%						
Operating Temperature	°C	3~20	-25°C ~ +90°C						
Lubrication		3~20	Synthetic oil						
Degree of Protection		3~20	IP65						
Mounting Position		3~20	Any						
Noise Level	dB(A)	3~20	≤ 65	≤ 68	≤ 70	≤ 72	≤ 74	≤ 76	≤ 78
Weight ± 3%	Kg	3~20	1	2.3	6.6	13.8	52.8	--	--

Note: The contents of this data sheet are subject to change without prior notice for the purpose of continuous product improvement.



PLANETARY SERVOBOX

DBL-A SERIES

RIGHT ANGLE PLANETARY SOLUTION UNIVERSAL DESIGN



High Precision Planetary ServoBox in right-angle solution and universal housing with precision bearings planetary gearing provides high torque density while offering high positioning performance.

- DBL Series 1-Stage Planetary ServoBox in Gear Reduction Ratio 3 ~ 20.
- DBL-A Series 2-Stage Planetary ServoBox in Gear Reduction Ratio 25 ~ 200.

GENERAL SPECIFICATIONS	Unit	Ratio	Model : DBL (2 Stage)						
			#44A	#62A	#90A	#120A	#142A	#180A	#220A
Frame Size	MM	15~200	44 x 44	62 x 62	90 x 90	120 x 120	142 x 142	180 x 180	220 x 220
Mounting PCD	MM	15~200	Ø50	Ø70	Ø100	Ø130	Ø165	Ø215	Ø250
Output Shaft Diameter	MM	15~200	Ø13	Ø16	Ø22	Ø32	Ø40	Ø55	Ø75
Output Shaft Length	MM	15~200	20	28	36	50	74	82	104
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 15	19	59	165	335	625	1,206	2,030
		Ratio 20	16	51	146	300	555	1,069	1,804
		Ratio 25	16	48	160	333	618	1,189	2,010
		Ratio 30	15	45	151	311	583	1,118	1,911
		Ratio 35	15	45	149	309	573	1,108	1,870
		Ratio 40	14	43	143	298	553	1,070	1,824
		Ratio 50	16	48	160	278	516	993	2,010
		Ratio 60	15	45	151	294	549	1,059	1,911
		Ratio 70	15	45	149	311	583	1,118	1,870
		Ratio 80	14	43	143	309	573	1,108	1,824
		Ratio 90	13	44	145	298	553	1,070	1,694
		Ratio 100	14	43	141	278	516	993	1,179
		Ratio 120	15	45	151	311	549	1,059	1,911
		Ratio 140	15	45	149	309	583	1,118	1,870
Ratio 160	14	43	143	298	573	1,108	1,824		
Ratio 180	13	44	145	278	553	1,070	1,694		
Ratio 200	14	43	141	294	516	993	1,779		
Max. Acceleration Torque	Nm	15~200	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	Nm	15~200	3 Times of Rated Output Torque						
Rated Input Speed	RPM	15~200	3,000	3,000	3,000	3,000	3,000	3,000	2,000
Maximum Input Speed	RPM	15~200	6,000	6,000	6,000	5,000	5,000	4,000	3,000
Backlash (arcmin)	PS	15~200	-	-	≤ 4arcmin	≤ 4arcmin	≤ 4arcmin	≤ 4arcmin	≤ 4arcmin
	P0 / P1 / P2	15~200	P0 ≤ 7arcmin ▪ P1 ≤ 9arcmin ▪ P2 ≤ 12arcmin						
Torsional Rigidity	Nm/arcmin	15~200	3	6	14	27	60	140	240
Maximum Radial Force	N	15~200	380	1180	3,200	6,800	9,300	15,600	51,000
Maximum Axial Force	N	15~200	190	590	1,600	3,400	4,650	7,800	25,500
Service Life	Hr	15~200	Intermittent Periodic Duty S5 > 30,000 hours Continuous Duty S1 > 15,000 hours						
Efficiency	%	15~200	≥ 92%						
Operating Temperature	°C	15~200	-25°C ~ +90°C						
Lubrication		15~200	Synthetic oil						
Degree of Protection		15~200	IP65						
Mounting Position		15~200	Any						
Noise Level	dB(A)	15~200	≤ 65	≤ 68	≤ 70	≤ 72	≤ 74	≤ 76	≤ 78
Weight ± 3%	Kg	15~200	1	3	8.2	13.8	23.5	--	--

Note: The contents of this data sheet are subject to change without prior notice for the purpose of continuous product improvement.



PLANETARY SERVOBOX

FE SERIES E-SERIES DESIGN HIGH PRECISION



E-Series ServoBox

FE Series 1-Stage ServoBox in Gear Ratio 3, 4, 5, 7 and 10

FE Series 2-Stage ServoBox in Gear Ratio 20, 25, 35, 40, 50, 70 and 100

GENERAL SPECIFICATION	Unit	Ratio	Model : FE (1 Stage) / (2 Stage)						
			#50	#70	#90	#120	#145	#180	#220
Output Flange Frame Size	MM	3~100	Ø50	Ø70	Ø93	Ø122	Ø148	Ø205	Ø242
Mounting PCD	MM	3~100	Ø42	Ø60	Ø80	Ø105	Ø130	Ø184	Ø218
Output Shaft Diameter	MM	3~100	Ø13	Ø16	Ø22	Ø32	Ø40	Ø55	Ø75
Output Shaft Length	MM	3~100	20	28	36	50	74	82	104
Rated Output Torque Capacity (1-Stage ServoBox)	Nm	Ratio 3	17	50	125	268	482	940	1,420
		Ratio 4	15	45	111	238	426	860	1,300
		Ratio 5	14	42	104	223	401	835	1,270
		Ratio 7	13	39	98	208	373	790	1,180
		Ratio 10	12	37	92	198	356	760	1,140
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 15	17	50	125	268	482	940	1,420
		Ratio 20	15	45	111	238	426	860	1,300
		Ratio 25	14	42	104	223	401	835	1,270
		Ratio 35	13	39	98	208	373	790	1,180
		Ratio 40	15	45	111	238	427	860	1,300
		Ratio 50	14	42	104	223	402	835	1,270
		Ratio 70	13	40	98	208	373	790	1,180
		Ratio 100	12	37	92	198	357	760	1,100
Max. Acceleration Torque	Nm	3~100	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	Nm	3~100	3 Times of Rated Output Torque						
Rated Input Speed	RPM	3~100	3,000	3,000	3,000	3,000	3,000	2,000	2,000
Maximum Input Speed	RPM	3~100	5,000	5,000	5,000	5,000	5,000	3,000	3,000
Backlash	Arcmin	3~100	≤ 8arcmin						
		3~100	≤ 12arcmin						
Torsional Rigidity	Nm/arcmin	3~100	2.3	5	15	45	69	140	220
Maximum Radial Force	N	3~100	750	1,180	3,000	6,500	9,100	11,150	35,000
Maximum Axial Force	N	3~100	325	590	1,500	3,250	4,550	5,575	17,500
Service Life	Hr	3~100	Intermittent Periodic Duty S5 > 20,000 hours Continuous Duty S1 > 10,000 hours						
Efficiency	%	3~10	≥ 97%						
		15~100	≥ 94%						
Operating Temperature	°C	3~100	-25°C ~ +90°C						
Lubrication		3~100	Synthetic Grease						
Degree of Protection		3~100	IP65						
Mounting Position		3~100	Any						
Noise Level	dB(A)	3~10	≤ 62	≤ 62	≤ 65	≤ 68	≤ 70	≤ 70	≤ 70
		15~100	≤ 65	≤ 65	≤ 68	≤ 70	≤ 72	≤ 72	≤ 72
Weight ± 3%	Kg	3~10	0.63	1.57	3.22	8	16	33	54
		15~100	0.9	2.24	4.59	11.2	22.5	46.4	75

* The contents of this data sheet are subject to change without notice in advance for the purpose of continuous product improvement.

* Please contact us for customized model.



PLANETARY SERVOBOX

PE SERIES E-SERIES DESIGN PRECISION SERVOBOX



E-Series ServoBox

PE Series 1-Stage ServoBox in Gear Ratio 3 ~ 10

PE Series 2-Stage ServoBox in Gear Ratio 12 ~ 64

GENERAL SPECIFICATION	Unit	Ratio	PE#32	PE#40	PE#60	PE#80
Output Flange Frame Size	MM	3~64	Ø32	Ø40	Ø60	Ø122
Mounting PCD	MM	3~64	Ø26	Ø32	Ø52	Ø105
Output Shaft Diameter	MM	3~64	Ø8	Ø10	Ø14	Ø32
Output Shaft Length	MM	3~64	16	23	29.5	50
Rated Output Torque Capacity (1-Stage ServoBox)	Nm	Ratio 3	8	12	30	90
		Ratio 4	10	16	38	120
		Ratio 5	11	17	41	130
		Ratio 7	9		32	110
		Ratio 8		12		
		Ratio 9	7			
		Ratio 10		10	25	80
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 12		11	30	90
		Ratio 15	8	11	30	90
		Ratio 20	10	16	38	120
		Ratio 25	11	17	41	130
		Ratio 32		16		
		Ratio 35	9		32	110
		Ratio 40		16	38	120
		Ratio 45	7			
		Ratio 50			41	130
		Ratio 63	9			
Ratio 64		17				
Max. Acceleration Torque	Nm	3~63	1.8 Times of Rated Output Torque			
Max. Output Torque Emergency Stop Torque	Nm	3~63	3 Times of Rated Output Torque			
Rated Input Speed	RPM	3~63	3,000	3,000	3,000	3,000
Maximum Input Speed	RPM	3~63	5,000	5,000	5,000	5,000
Backlash	Arcmin	3~9	≤ 12arcmin			
		12~64	≤ 20arcmin			
Torsional Rigidity	Nm/arcmin	3~64	0.8	1	2.3	6
Maximum Radial Force	N	3~64	130	300	689	1,750
Maximum Axial Force	N	3~64	65	150	340	875
Service Life	Hr	3~64	Intermittent Periodic Duty S5 > 20,000 hours Continuous Duty S1 > 10,000 hours			
Efficiency	%	3~9	≥ 96%			
		12~64	≥ 94%			
Operating Temperature	°C	3~64	-25°C ~ +90°C			
Lubrication		3~64	Synthetic Grease			
Degree of Protection		3~64	IP54			
Mounting Position		3~64	Any			
Noise Level	dB(A)	3~10	≤ 56	≤ 58	≤ 58	≤ 60
		12~64	≤ 58	≤ 60	≤ 60	≤ 62
Weight ± 3%	Kg	3~10	0.2	0.35	0.9	2.1
		12~64	0.3	0.45	1.1	2.6

* The contents of this data sheet are subject to change without notice in advance for the purpose of continuous product improvement.

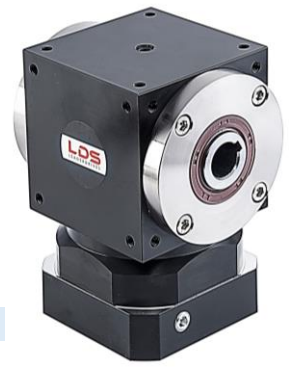
* Please contact us for customized model.



SPIRAL BEVEL GEAR SERVOBOX

ST-FO/RO SERIES

**COMPACT RIGHT ANGLE SOLUTION
HIGHEST EFFICIENCY DESIGN**



FT-FO SERIES

Ultra Compact Design Series

Features :

- Employ high precision grinded and carburized spiral bevel gears to meet standard AGMA12.
- High efficiency design ($\geq 98\%$) to transmit rotational motion at right angles
- Max gear reduction ratio up to 1/500.
- Hollow output shaft / single output shaft / double outputs shaft and multiple shaft configurations are available.

Ball Bearing Design (ST-FO-B / ST-RO-B) / Taper Bearing Design (ST-FO-T / ST-RO-T)

- ST-FO: 1-Stage ServoBox in Gear Ratio 1, 2, 3, 4 and 5.
- ST-RO: 2-Stage ServoBox in Gear Ratio 10, 15, 20, 25, 30, 40 and 50.

* FT-FO/RO – Ultra Compact Spiral Bevel Gear ServoBox

GENERAL SPECIFICATIONS	Unit	Ratio	Model : ST (1 Stage) / (2 Stage)						
			#65	#75	#90	#110	#140	#170	#210
Frame Size	MM	1~50	65 x 65	75 x 75	90 x 90	110 x 100	140 x 140	170 x 170	210 x 210
Mounting Dimension	MM	1~50	52 x 52	60 x 60	72 x 72	88 x 88	110 x 110	134 x 134	170 x 170
Hollow Output Shaft Bore Diameter	MM	1~50	Ø14	Ø14	Ø18	Ø22	Ø32	Ø40	Ø50
Rated Output Torque Capacity (1-Stage ServoBox)	Nm	Ratio 1	25	45	78	150	360	585	1,300
		Ratio 2	24	42	68	150	330	544	1,220
		Ratio 3	18	33	54	120	270	450	1,020
		Ratio 4	13	28	52	100	224	376	860
		Ratio 5	12	25	40	85	196	320	740
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 10	24	42	68	150	330	544	1,220
		Ratio 15	18	33	54	120	270	450	1,020
		Ratio 20	13	28	48	100	224	376	860
		Ratio 25	12	25	40	85	196	320	740
		Ratio 30	18	33	54	120	270	450	1,020
		Ratio 40	13	28	52	100	224	376	860
Ratio 50	12	25	40	85	196	320	740		
Max. Acceleration Torque	Nm	1~50	1.5 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	Nm	1~50	3 Times of Rated Output Torque						
Rated Input Speed	RPM	1~5	3,000	3,000	3,000	2,500	2,500	2,000	2,000
		10~50	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Maximum Input Speed	RPM	1~5	6,000	6,000	5,500	4,500	3,500	3,000	3,000
		10~50	6,000	6,000	6,000	6,000	6,000	5,000	5,000
Backlash (arcmin)	Arcmin	1~5	P0 ≤ 2 arcmin / P1 ≤ 5 arcmin / P2 ≤ 9 arcmin						
		10~50	P0 ≤ 4 arcmin / P1 ≤ 7 arcmin / P2 ≤ 10 arcmin						
Maximum Radial Force	N (Ball Bearing)	1~50	700	1,050	1,500	2,360	3,080	4,800	6,400
	N (Taper Bearing)	1~50	--	2,400	3,200	5,000	6,500	9,100	13,000
Maximum Axial Force	N (Ball Bearing)	1~50	350	525	750	1,180	1,540	2,400	3,200
	N (Taper Bearing)	1~50	--	1,200	1,600	2,500	3,250	4,550	6,500
Service Life	Hr	1~50	Intermittent Periodic Duty S5 > 20,000 hours Continuous Duty S1 > 10,000 hours						
Efficiency	%	1~5	$\geq 98\%$						
		10~50	$\geq 94\%$						
Operating Temperature	°C	1~50	-30°C ~ +100°C						
Lubrication		1~50	Synthetic oil						
Degree of Protection		1~50	IP65						
Mounting Position		1~50	Any						
Noise Level	dB(A)	1~5	≤ 65	≤ 67	≤ 71	≤ 73	≤ 74	≤ 75	≤ 77
		10~50	≤ 68	≤ 69	≤ 73	≤ 74	≤ 75	≤ 76	≤ 78

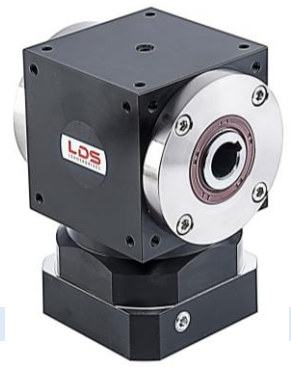


SPIRAL BEVEL GEAR SERVOBOX

ST

SERIES

SPIRAL BEVEL GEAR SERVOBOX DESIGN SELECTION



INPUT TYPE

F
Input Flange
Ratio 1 ~ 5

R
Input Flange
Ratio 10 ~ 50

D
Single Input Shaft

Y
Double Input Shaft

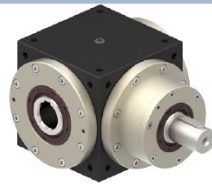
O
Hollow Output
Shaft



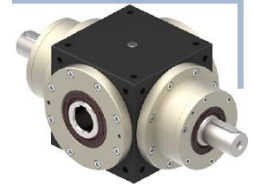
FO



RO



DO



YO

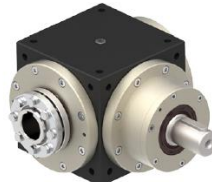
N
Hollow Output
Shaft with
Single Clamping



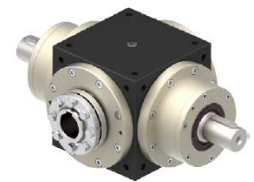
FN



RN



DN



YN

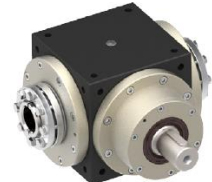
M
Hollow Output
Shaft with
Double Clamping



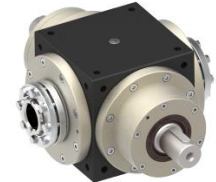
FM



RM



DM

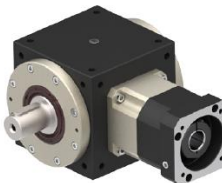


YM

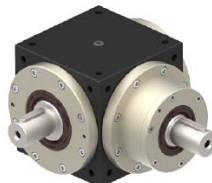
S
Single Output
Shaft



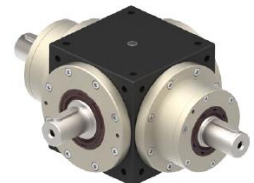
FS



RS



DS



YS

V
Double Output
Shaft



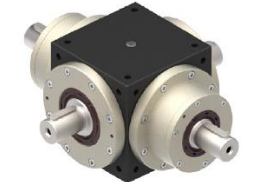
FV



RV



DV



YV

P
For Ball Screw



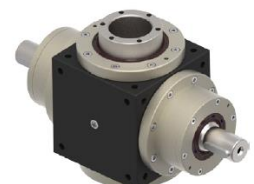
FP



RP



DP



YP

OUTPUT TYPE

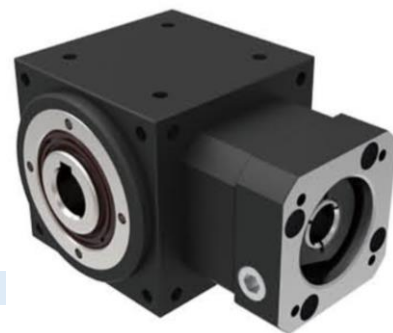


SPIRAL BEVEL GEAR SERVOBOX

FT-FO/RO

SERIES

ULTRA COMPACT RIGHT ANGLE SOLUTION
HIGHEST EFFICIENCY DESIGN



Features :

- Employ high precision grinded and carburized spiral bevel gears to meet standard AGMA12.
- High efficiency design ($\geq 98\%$) to transmit rotational motion at right angles
- Hollow output shaft / single output shaft / double outputs shaft and multiple shaft configurations are available.
- Ball Bearing Design
- ST-FO: 1-Stage ServoBox in Gear Ratio 2, 3, 4 and 5.
- ST-RO: 2-Stage ServoBox in Gear Ratio 10, 15, 20, 25, 30, 40 and 50.

GENERAL SPECIFICATIONS	Unit	Ratio	FT60	FT70
Frame Size	MM	2~50	60 x 60	75 x 75
Hollow Output Shaft Bore Diameter	MM	2~50	Ø14	Ø14
Rated Output Torque	Nm (1Stage)	2	15	22
		3	13	18
		4	13	18
		5	12	16
	Nm (2Stage)	10	15	22
		15	13	18
		20	13	18
		25	12	16
		30	13	18
		40	13	18
50	12	16		
Max. Output Torque Emergency Stop Torque	Nm	2~50	2 Times of Rated Output Torque	
Rated Input Speed	RPM	2~50	3,000	3,000
Maximum Input Speed	RPM	2~50	7,000	7,000
Backlash (arcmin)	Arcmin	2~5	≤ 10 arcmin	≤ 10 arcmin
		10~50	≤ 12 arcmin	≤ 12 arcmin
Maximum Radial Force	N	2~5	600	800
		10~50	600	800
Maximum Axial Force	N	2~5	300	400
		10~50	300	400
Service Life	Hr	2~50	Intermittent Periodic Duty S5 > 20,000 hours Continuous Duty S1 > 10,000 hours	
Efficiency	%	1~5	$\geq 98\%$	$\geq 98\%$
		10~50	$\geq 94\%$	$\geq 94\%$
Operating Temperature	°C	1~50	-10°C ~ +90°C	
Lubrication		1~50	Synthetic oil	
Degree of Protection	IP	1~50	IP65	
Mounting Position		1~50	Any	
Noise Level	dB(A)	1~5	≤ 68	≤ 70
		10~50	≤ 70	≤ 72

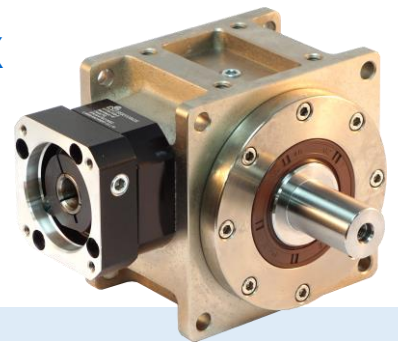
Note: The contents of this data sheet are subject to change without prior notice for the purpose of continuous product improvement.



SPIRAL BEVEL GEAR SERVOBOX

HY-FV/RV SERIES

HYPOID BEVEL GEAR DESIGN
ALUMINIUM DIE-CAST ALLOY HOUSING



Features :

- Compact design to transmit rotational motion at right angles with higher torque capability
- Ball bearing and taper bearing option
- Heavy duty housing in aluminium die-cast alloy to withstand highest operating temperature
- Single stage gear ratio 1/20 ~ 1/60 available upon request.
- Hollow output shaft / single output shaft / double outputs shaft and multiple shaft configurations are available.

Ball Bearing Design (HY-FV/RV-B) / Taper Bearing Design (HY-FV/RV-T)

- 1-Stage ServoBox in Gear Ratio 1/5, 1/10 and 1/15.
- 2-Stage ServoBox in Gear Ratio 1/25, 1/50, 1/75, 1/100 and 1/150.

GENERAL SPECIFICATIONS	Unit	Ratio	Model : HY (1 Stage) / (2 Stage)							
			#55	#75	#90	#115	#130	#140	#160	#190
Frame Size	MM	5~150	90 x 90	115 x 115	140 x 140	170 x 170	192 x 192	215 x 215	240 x 240	264 x 264
Mounting Dimension	MM	5~150	78 x 78	98 x 98	118 x 118	144 x 144	164 x 164	182 x 182	206 x 206	224 x 224
Output Shaft Diameter	MM	5~150	Ø20	Ø24	Ø32	Ø40	Ø48	Ø55	Ø60	Ø70
Output Shaft Length	MM	5~150	35	35	50	60	70	80	100	110
Rated Output Torque Capacity (1-Stage ServoBox)	Nm	Ratio 5	35	70	140	260	430	720	1,100	1,440
		Ratio 10	30	60	117	220	365	615	957	1,230
		Ratio 15	25	50	95	180	300	510	815	1,020
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 25	35	70	140	260	430	720	1,100	1,440
		Ratio 50	35	70	140	260	430	720	1,100	1,440
		Ratio 75	25	50	95	180	300	510	815	1,020
		Ratio 100	30	60	117	220	365	615	957	1,230
		Ratio 150	25	50	95	180	300	510	815	1,020
Max. Acceleration Torque	Nm	5~150	1.5 Times of Rated Output Torque							
Max. Output Torque Emergency Stop Torque	Nm	5~150	3 Times of Rated Output Torque							
Rated Input Speed	RPM	5~15	3,000	3,000	3,000	3,000	2,500	2,500	2,000	2,000
		25~150	3,000	3,000	3,000	3,000	2,500	2,500	2,000	2,000
Maximum Input Speed	RPM	5~15	6,000	6,000	6,000	6,000	5,000	5,000	4,000	4,000
		25~150	6,000	6,000	6,000	6,000	5,000	5,000	4,000	4,000
Backlash (arcmin)	Arcmin	5~15	P0 ≤ 2 arcmin / P1 ≤ 5 arcmin / P2 ≤ 8 arcmin							
		25~150	P0 ≤ 3 arcmin / P1 ≤ 6 arcmin / P2 ≤ 9 arcmin							
Maximum Radial Force	N (Ball Bearing)	5~15	1,150	1,820	2,080	3,700	4,500	5,400	7,300	9,450
		25~150	1,820	2,700	3,960	5,500	6,930	8,250	9,900	12,375
	N (Taper Bearing)	5~15	--	9,450	8,000	12,700	16,500	20,400	27,200	34,500
		25~150	3,300	4,900	7,200	10,000	12,600	15,000	18,000	22,500
Maximum Axial Force	N (Ball Bearing)	5~15	575	910	1,040	1,850	2,250	2,700	3,650	4,725
		25~150	910	1,350	1,980	2,750	3,810	4,540	5,450	6,190
	N (Taper Bearing)	5~15	--	4,725	4,000	6,350	8,250	10,200	13,600	17,250
		25~150	1,650	2,450	3,600	5,000	6,300	7,500	9,000	11,250
Service Life	Hr	5~150	Intermittent Periodic Duty S5 > 30,000 hours Continuous Duty S1 > 15,000 hours							
Efficiency	%	5~15	≥ 92%							
		25~150	≥ 90%							
Operating Temperature	°C	5~150	-10°C ~ +90°C							
		Lubrication	5~150	Synthetic oil						
Degree of Protection		5~150	IP65							
Mounting Position		5~150	Any							
Noise Level	dB(A)	5 / 25 / 75	≤ 67	≤ 67	≤ 69	≤ 69	≤ 71	≤ 71	≤ 72	≤ 72
		10~15 / 100~150	≤ 66	≤ 66	≤ 68	≤ 68	≤ 70	≤ 70	≤ 71	≤ 71

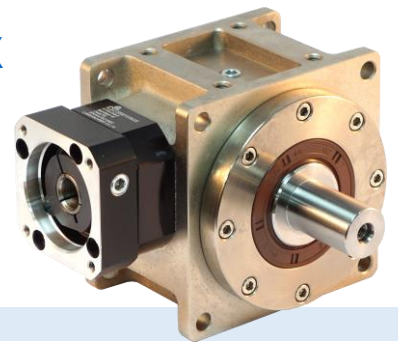


SPIRAL BEVEL GEAR SERVOBOX

HY

SERIES

HYPOID BEVEL GEAR SERVOBOX DESIGN SELECTION



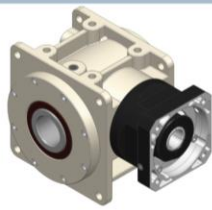
INPUT TYPE

F
Input Flange
Ratio 3 ~ 15

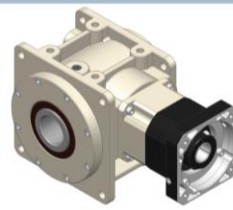
R
Input Flange
Ratio 20 ~ 150

D
Single Input Shaft

O
Hollow Output
Shaft



FO

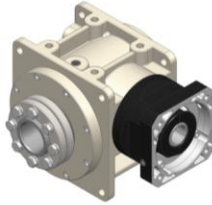


RO

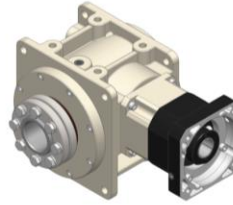


DO

N
Hollow Output
Shaft with
Single Clamping



FN

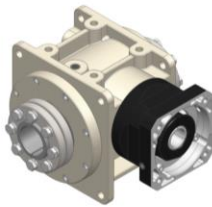


RN

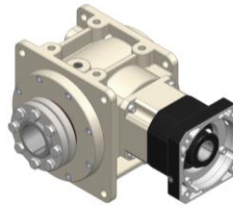


DN

M
Hollow Output
Shaft with
Double Clamping



FM

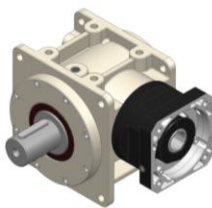


RM

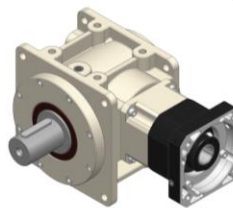


DM

S
Single Output
Shaft



FS

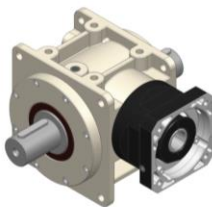


RS

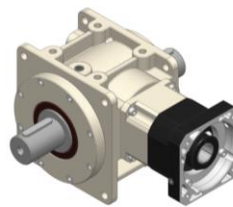


DS

V
Double Output
Shaft



FV



RV



DV

P
For Ball Screw



FP



RP



DP

OUTPUT TYPE



PLANETARY SERVOBOX

SD

SERIES

HIGH PRECISION ROTARY OUTPUT FLANGE
OPTIMUM RADIAL LOAD



SDH Series

Features :

- Precise in-line planetary system with rotary flange design.
- Low backlash between 1~12arcmin.
- Ball bearing and taper bearing option.
- Universal housing and is suitable for rotary and turntable applications.

Ball Gearing Design (SD-B) / Taper Bearing Design (SD-T)

- 1-Stage ServoBox in Gear Ratio 1/4, 1/5, 1/7 and 1/10.
- 2-Stage ServoBox in Gear Ratio 1/20, 1/25, 1/35, 1/40, 1/50, 1/70 and 1/100.

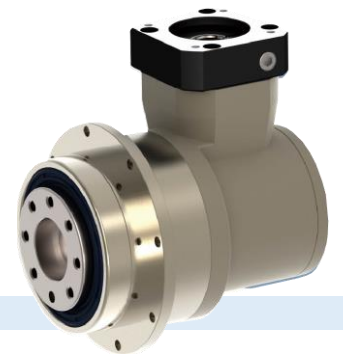
GENERAL SPECIFICATIONS	Unit	Ratio	Model : SD (1 Stage) / (2 Stage)						
			#47	#64	#90	#110	#140	#200	#255
Frame Size Ø	MM	4~100	Ø72	Ø86	Ø118	Ø146	Ø179	Ø248	Ø300
Mounting PCD	MM	4~100	Ø67	Ø79	Ø109	Ø135	Ø168	Ø233	Ø280
Rotary Mounting PCD	MM	4~100	Ø20	Ø31.5	Ø50	Ø63	Ø80	Ø125	Ø140
Rated Output Torque Capacity (1-Stage ServoBox)	Nm	Ratio 4	22	60	160	335	650	1,200	2,020
		Ratio 5	20	50	155	333	618	1,189	2,010
		Ratio 7	19	47	142	309	573	1,108	1,870
		Ratio 10	16	43	136	294	549	1,059	1,779
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 20	22	60	160	335	650	1,200	2,020
		Ratio 25	20	50	155	333	618	1,189	2,010
		Ratio 35	19	47	142	309	573	1,108	1,870
		Ratio 40	22	60	160	335	650	1,200	2,020
		Ratio 50	20	50	155	333	618	1,189	2,010
		Ratio 70	19	47	142	309	573	1,108	1,870
Ratio 100	16	43	136	294	549	1,059	1,779		
Max. Acceleration Torque	Nm	4~100	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	Nm	4~100	3 Times of Rated Output Torque						
Rated Input Speed	RPM	4~100	3,000	3,000	3,000	3,000	3,000	3,000	2,000
Maximum Input Speed	RPM	4~100	6,000	6,000	6,000	6,000	5,000	4,000	3,000
Backlash	Arcmin	4~10	Ps ≤ 1arcmin ▪ PO ≤ 3arcmin ▪ P1 ≤ 5arcmin ▪ P2 ≤ 7arcmin						
		20~100	Ps ≤ 3arcmin ▪ PO ≤ 5arcmin ▪ P1 ≤ 7arcmin ▪ P2 ≤ 9arcmin						
Torsional Rigidity	Nm/arcmin	4~100	6	14	30	86	155	450	1,126
Maximum Axial Force	N (Ball Bearing)	4~100	1,020	1,260	4,230	6,360	7,035	17,600	19,800
	N (Taper Bearing)	4~100	--	--	7,330	11,500	18,600	36,800	53,600
Maximum Radial Force	N (Ball Bearing)	4~100	2,040	2,520	8,460	12,720	14,070	35,200	39,600
	N (Taper Bearing)	4~100	--	--	14,660	23,000	37,200	73,600	107,200
Service Life	Hr	15~200	Intermittent Periodic Duty S5 > 30,000 hours Continuous Duty S1 > 15,000 hours						
Efficiency	%	4~10	≥ 97%						
		20~100	≥ 94%						
Operating Temperature	°C	15~200	-25°C ~ +90°C						
Lubrication		15~200	Synthetic Grease						
Degree of Protection		15~200	IP65						
Mounting Position		15~200	Any						
Noise Level	dB(A)	4~10	≤ 56	≤ 58	≤ 60	≤ 63	≤ 65	≤ 67	≤ 70
		20~100	≤ 58	≤ 60	≤ 63	≤ 65	≤ 67	≤ 70	≤ 72



HELICAL HYPOID SERVOBOX

SDH SERIES

HIGH PRECISION ROTARY OUTPUT FLANGE



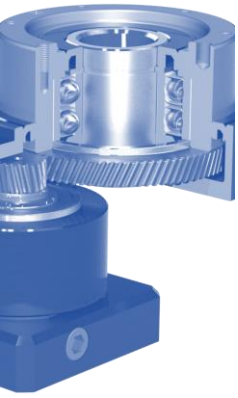
Features :

- Precise right angle helical hypoid gear system with rotary flange design.
- Low backlash between 4~10arcmin.
- Ball bearing and taper bearing option.
- Universal housing and is suitable for rotary and turntable applications.

Ball Gearing Design (SDH-B) / Taper Bearing Design (SDH-T)

- 2-Stage ServoBox in Gear Ratio 1/20, 1/25, 1/35, 1/40, 1/50, 1/70, 1/100 and 1/150.

GENERAL SPECIFICATIONS	Unit	Ratio	Model : SDH (2 Stage)						
			#47	#64	#90	#110	#140	#200	#255
Frame Size Ø	MM	20~150	--	Ø86	Ø118	Ø146	Ø179	Ø248	Ø300
Mounting PCD	MM	20~150	--	Ø79	Ø109	Ø135	Ø168	Ø233	Ø280
Rotary Mounting PCD	MM	20~150	--	Ø31.5	Ø50	Ø63	Ø80	Ø125	Ø140
Rated Output Torque Capacity (2-Stage ServoBox)	Nm	Ratio 20	--	60	160	335	650	1,200	2,020
		Ratio 25	--	50	155	333	618	1,189	2,010
		Ratio 35	--	47	142	309	573	1,108	1,870
		Ratio 40	--	60	160	335	650	1,200	2,020
		Ratio 50	--	50	155	333	618	1,189	2,010
		Ratio 70	--	47	142	309	573	1,108	1,870
		Ratio 100	--	43	136	294	549	1,059	1,779
		Ratio 150	--	43	136	294	549	1,059	1,779
Max. Acceleration Torque	Nm	20~150	1.8 Times of Rated Output Torque						
Max. Output Torque Emergency Stop Torque	Nm	20~150	3 Times of Rated Output Torque						
Rated Input Speed	RPM	20~150	--	3,000	3,000	3,000	3,000	3,000	2,000
Maximum Input Speed	RPM	20~150	--	6,000	6,000	6,000	5,000	4,000	3,000
Backlash	Arcmin	20~150	P0 ≤ 4arcmin ▪ P1 ≤ 7arcmin ▪ P2 ≤ 10arcmin						
Torsional Rigidity	Nm/arcmin	20~150	--	14	30	86	155	450	1,126
Maximum Axial Force	N (Ball Bearing)	20~150	--	1,260	4,230	6,360	7,035	17,600	19,800
	N (Taper Bearing)	20~150	--	--	7,330	11,500	18,600	36,900	53,600
Maximum Radial Force	N (Ball Bearing)	20~150	--	2,520	8,460	12,720	14,070	35,200	39,600
	N (Taper Bearing)	20~150	--	--	14,660	23,000	37,200	73,600	107,200
Service Life	Hr	20~150	Intermittent Periodic Duty S5 > 30,000 hours Continuous Duty S1 > 15,000 hours						
Efficiency	%	20~150	≥ 95%						
Operating Temperature	°C	20~150	-25°C ~ +90°C						
Lubrication		20~150	Synthetic Grease						
Degree of Protection		20~150	IP65						
Mounting Position		20~150	Any						
Noise Level	dB(A)	20~150	--	≤ 68	≤ 70	≤ 72	≤ 74	≤ 76	≤ 78



HOLLOW ROTARY ACTUATOR SERVOBOX

GT SERIES

HOLLOW ROTARY TABLE PRECISE POSITIONING AND REPEATABILITY



Features :

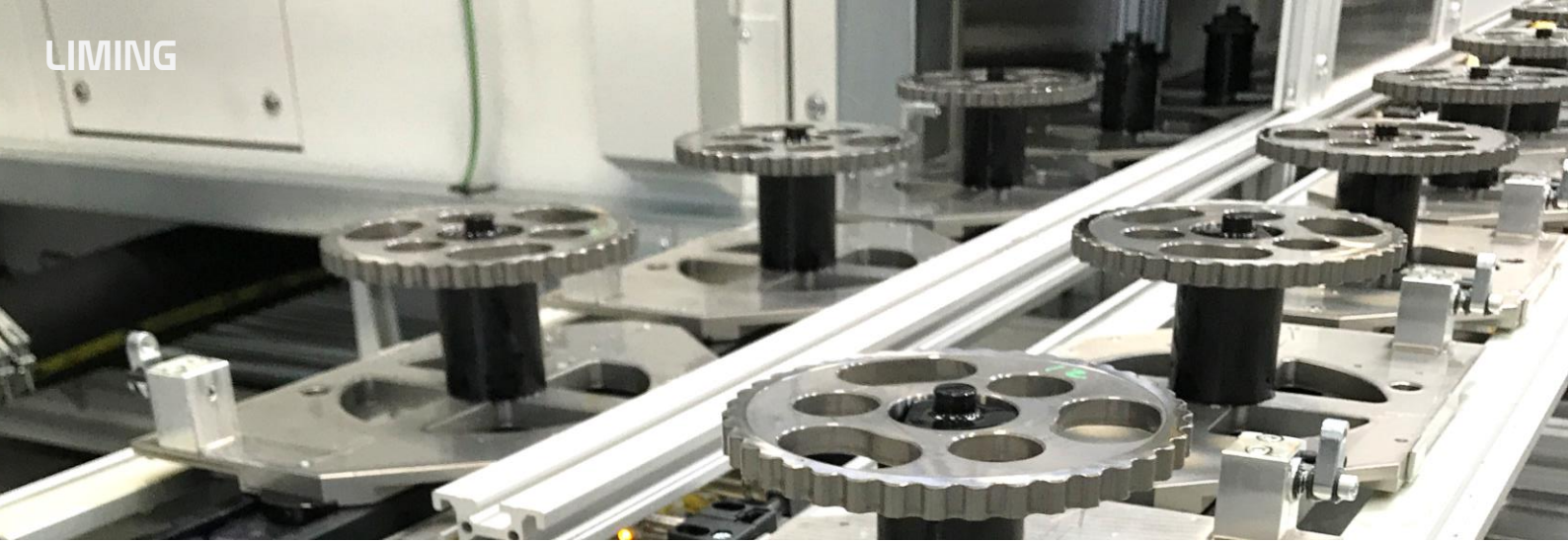
- Solid hollow output table that allows simple wiring and piping on your equipment design.
- Ball bearing and crossed roller bearing option.
- Repetitive Positioning Accuracy ± 10 arcsec (0.0028°).
- Lost Motion 2arcmin (0.033°).
- Torsional Backlash ≤ 2 arcmin.

Ball Bearing Design (GT-B) / Crossed Roller Bearing Design (GT-C)

- 1-Stage ServoBox in Gear Ratio 5, 10 and 18.
- 2-Stage ServoBox in Gear Ratio 25, 50 and 100 (fitted with planetary gear).



GENERAL SPECIFICATIONS	Unit	Bearing Type (Ratio 5, 10, 18) (Ratio 25, 50, 100)	Model : GT (1 Stage) / (2 Stage)				
			#60	#85	#110	#135	#200
Frame Size	MM	Ball / Crossed Roller	60 x 60	85 x 85	110 x 110	135 x 135	200 x 200
Mounting Dimension	MM	Ball / Crossed Roller	50 x 50	70 x 70	90 x 90	110 x 110	170 x 170
Rotary Flange Diameter	MM	Ball / Crossed Roller	Ø45	Ø70	Ø95	Ø115	Ø170
Hollow Rotary Flange Dia.	MM	Ball / Crossed Roller	Ø20	Ø22	Ø30	Ø50	Ø75
Rated Output Torque Capacity (1-Stage ServoBox) (Ball & Crossed Roller Type)	Nm	Ratio 5	5	18	33	43	142
		Ratio 10	4	14	26	34	112
		Ratio 18	3	10	19	25	85
Rated Output Torque Capacity (1-Stage ServoBox) (Ball & Crossed Roller Type)	Nm	Ratio 25	5	18	33	43	142
		Ratio 50	4	14	26	34	112
		Ratio 100	4	14	26	34	112
Max. Acceleration Torque	Nm	Ball / Crossed Roller	1.5 Times of Rated Output Torque				
Max. Output Torque Emergency Stop Torque	Nm	Ball / Crossed Roller	2 Times of Rated Output Torque				
Inertia Moment	Kg.m ²	Ball	777×10^{-7}	1268×10^{-6}	1562×10^{-6}	2918×10^{-6}	29072×10^{-6}
		Crossed Roller	735×10^{-7}	1203×10^{-6}	1483×10^{-6}	2772×10^{-6}	27619×10^{-6}
Permissible Output Speed	RPM	Ball	300				
		Crossed Roller	200				
Torsional Backlash	Arcmin	Ball / Crossed Roller	Ratio 5, 10, 18 : ≤ 1 arcmin Ratio 25, 50, 100 : ≤ 3 arcmin				
Lost Motion	Arcmin	Ball / Crossed Roller	2 (0.033°)				
Repetitive Positioning Accuracy	Arcsec	Ball / Crossed Roller	± 10 (0.0028°)				
Permissible Trust Load	N	Ball Bearing	350	600	800	1,450	2,500
		Crossed Roller Bearing	500	900	1,200	2,200	4,000
Permissible Moment Load	Nm	Ball Bearing	7	12	16	30	50
	Nm	Crossed Roller Bearing	10	18	24	45	80
Runout of Output Table Surface	MM	Ball / Crossed	0.01	0.01	0.015	0.015	0.02
Runout of Output Table Inner / Outer Diameter	MM	Ball / Crossed	0.01	0.01	0.015	0.015	0.02
Parallelism of Output Table	MM	Ball / Crossed	0.02	0.02	0.025	0.025	0.03
Protection Class		Ball / Crossed	IP 65				



CYKO DRIVE HIGH SHOCK-LOAD CAPABILITY

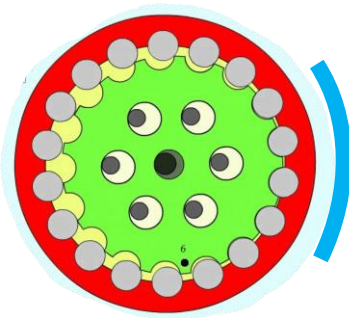
CYKODRIVE servobox (Precision High Shock-Load Cyclo Drive Design)



- Model available #6 ~ #320
- Output rotary flange supported by Angular Contact Ball Bearing
- Backlash : $1 \leq 6$ arcmin
- Gear Reduction Ratio : $1/41 \sim 1/171$
- Rated Output Torque : up to 3,200Nm
- Max. Output Torque : 5-times of Rated Torque
- Max. Emergency Stop Torque : 5-times of Rated Torque
- Max. Acceleration Stop Torque : 2.5-times of Rated Torque
- Nominal Input Speed : 3000rpm
- Max Radial Force : up to 19,000N
- Max Axial Force : up to 15,000N
- Torsional Rigidity : up to 3,00Nm/arcmin
- Efficiency : $\geq 85\%$
- Service Life : S5 Duty > 6,000 hours ■ S1 Duty > 3000 hours

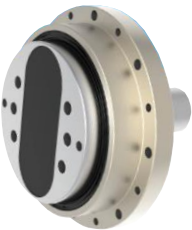


RSM Series
with servo motor adapter



CykoDrive Design :
Large number of teeth come in contact simultaneously


CykoDrive Design Option :



RSE Series
with Solid Input Shaft
Type



RCM Series
with Hollow Rotary
Flange Type



Cyko Drive ServoBox allows high shockload in your precision robotic application

ROBONIC DRIVE ZERO-BACKLASH* SERVOBOX FOR ROBOTICS

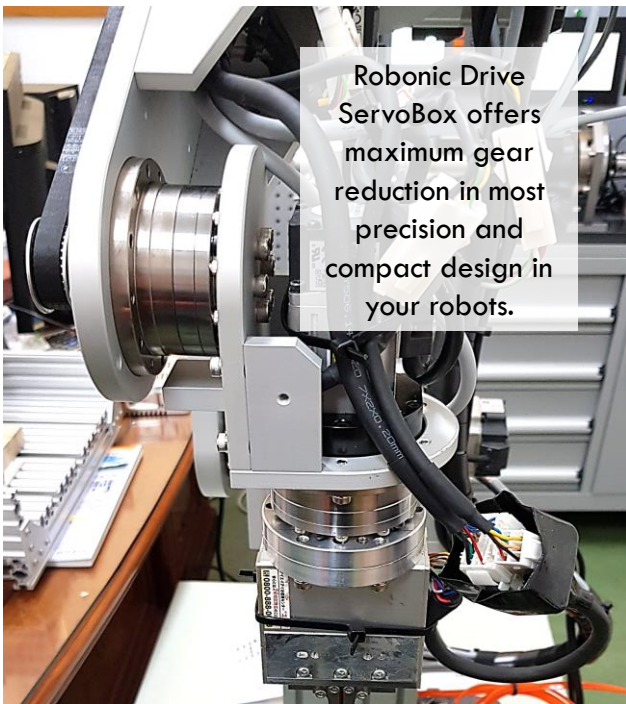
ROBONICDRIVE servobox (*Zero-Backlash design concept as Harmonic Drive)

is very commonly implemented in robotics and aerospace nowadays. DSF / DHF servobox series offer the ultimate in design flexibility and can be tightly integrated into your machine design. These are well suited for applications where high torque density is of paramount importance.

- Model available #14 ■ #17 ■ #20 ■ #25 ■ #32 ■ #40
- Backlash : $5 \leq 20$ arcsec
($0.08\text{arcmin} \leq 0.33\text{arcmin}$) ($0.0013^\circ \sim 0.0055^\circ$)
- Gear Reduction Ratio $1/50$ ■ $1/80$ ■ $1/100$ ■ $1/120$
- Rated Output Torque up to 300Nm
- Max. Output Torque : 2-times of Rated Torque
- Max. Emergency Stop Torque : 3-times of Rated Torque
- Nominal Input Speed : 2000rpm
- Service Life : S5 Duty > 6,000 hours (Not for continuous running)
- Outer Frame Size : max 73mm ~ 160mm (PCD : 65 ~ 144mm)
Height : 38mm ~ 73.5mm



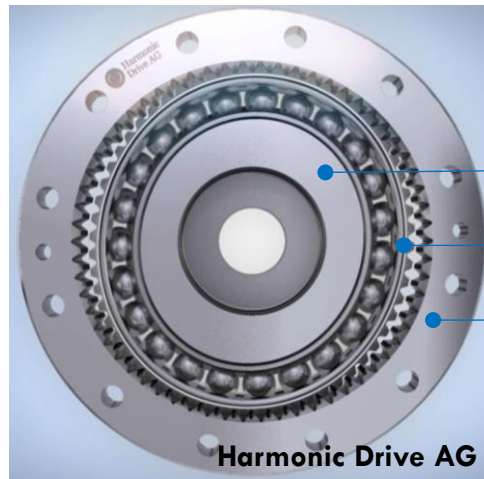
DSF-M Series
with servo motor adapter



Robonic Drive ServoBox offers maximum gear reduction in most precision and compact design in your robots.

ServoBox Design :

Strain Wave Gear enables no backlash, high compactness, light weight, and high gear ratios within compact housing



- Wavegear
- Flexspline
- Fixed-ring gear

Harmonic Drive AG

RobonicDrive Design Option :



DSF-AC Series
Input Collet Locking
Mechanism Type



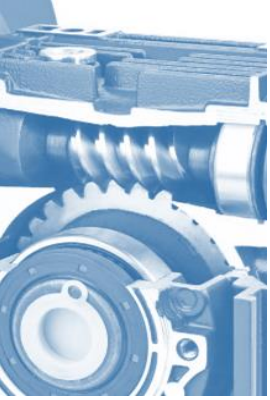
DSF-AK Series
Input Hollow Shaft Type
(Key-way)



DSF-M Series
with Servo Motor
Adapter Type



DSF-S Series
with Solid Input Shaft
Type



NON PRECISION

DMRS-CM SERIES

**WORM GEAR REDUCER
SERVO MOTOR COMPATIBLE**



The Worm Gear Reducer is designed with high thermal capacity die-cast aluminium housings for exceptional heat dissipation. It uses high efficiency gear design to create maximum torque output in a highly compact package. The housings come with a rust-free powder coat paint finishing.

General Specification

Backlash :	Non-precision
Max. Output Torque (Emergency Stop Torque) :	2 Times of Rated Output Torque
Rated Input Speed :	Servo motor speed < 1400rpm
Service Life :	Continuous Duty S1 > 3,000 hours; Intermittent Periodic Duty S5 > 6,000 hours
Efficiency :	55% ~ 85%
Degree of Protection :	IP54
PAM (Servo Motor Power) :	0.2kW to 3kW

Worm Gear Reducer Ratio and Rated Output Torque

Model No	DMRS 040	DMRS 050	DMRS 063
Hollow Output Shaft Size	Ø18 x 78mmL	Ø25 x 92mmL	Ø25 x 112mmL
Gear Reduction Ratio (1/X)	Output Torque (Nm)	Output Torque (Nm)	Output Torque (Nm)
5	28	51	77
7.5	32	60	108
10	33	59	111
15	14	63	116
20	27	61	111
25	21	72	110
30	35 (SSL)	83 (SSL)	139 (SSL)
40	33 (SSL)	62 (SSL)	119 (SSL)
50	31 (SSL)	60 (SSL)	127 (SSL)
60	14 (SSL)	29 (SSL)	59 (SSL)
80	11 (FSL)	28 (FSL)	52 (FSL)
100	-	25 (FSL)	45 (FSL)

Model No	DMRS 075	DMRS 090	DMRS 110	DMRS 130
Hollow Output Shaft Size	Ø28 x 120mmL	Ø35 x 140mmL	Ø42 x 165mmL	Ø42 x 170mmL
Gear Reduction Ratio (1/X)	Output Torque (Nm)	Output Torque (Nm)	Output Torque (Nm)	Output Torque (Nm)
5	-	-	-	-
7.5	152	245	374	611
10	165	263	417	683
15	174	293	565	779
20	182	305	479	733
25	171	280	478	806
30	194 (SSL)	359	593	900
40	180 (SSL)	281 (SSL)	532 (SSL)	878 (SSL)
50	175 (SSL)	276 (SSL)	511 (SSL)	1036 (SSL)
60	182 (SSL)	283 (SSL)	486 (SSL)	786 (SSL)
80	141 (FSL)	237 (SSL)	411 (SSL)	680 (SSL)
100	137 (FSL)	227 (FSL)	394 (SSL)	805 (FSL)



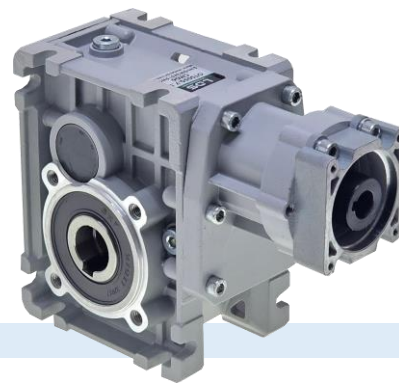
Remark :
SSL (Semi-self-locking)
FSL (Full-self-locking)



NON PRECISION

OTS-CM SERIES

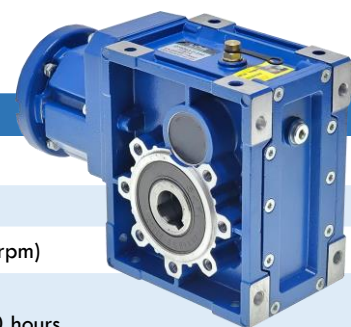
HELICAL HYPOID GEAR REDUCER
SERVO MOTOR COMPATIBLE



The Helical Hypoid Gear Reducer offers higher transmission efficiency and longer lifespan compared to conventional IEC worm gear reducer. Having compactible design with IEC Worm Gear Reducer, it comes with high thermal capacity die-cast aluminium housings and offers gear reduction ratio up to 1/300.

Features:

- Helical Hypoid Gear design offer higher higher transmission efficiency and longer lifespan compared to conventional worm gear reducer.
- Higher Gear Reduction Ratio from 1/7.5 ~ 1/300.
- More energy-saving and lower operating temperature.
- Smooth running operation with lower noise compared to worm gear reducer.



General Specification

Backlash :	Non-precision
Max. Output Torque (Emergency Stop Torque) :	2 Times of Rated Output Torque
Rated Input Speed :	Servo motor speed < 2000rpm (2500rpm)
Service Life :	Continuous Duty S1 > 6,000 hours; Intermittent Periodic Duty S5 > 12,000 hours
Efficiency :	80% ~ 90%
Degree of Protection :	IP54
PAM (Servo Motor Power) :	0.2kW to 3kW

Helical Hypoid Gear Reducer Ratio and Permissible Output Torque

2-stage Helical Hypoid Gear	Model No	OTS 050(2)		OTS 063(2)		OTS 075(2)		OTS 090(2)		OTS 110(2)	
	Hollow Output Shaft Size	Ø25 x 92mmL (Ø20 Customised)		Ø25 x 112mmL		Ø28 x 120mmL		Ø35 x 140mmL		Ø42 x 155mmL	
	Nominal Gear Ratio (1/X)	Actual Gear Ratio (1/X)	Output Torque (Nm)	Actual Gear Ratio (1/X)	Output Torque (Nm)	Actual Gear Ratio (1/X)	Output Torque (Nm)	Actual Gear Ratio (1/X)	Output Torque (Nm)	Actual Gear Ratio (1/X)	Output Torque (Nm)
	7.5	7.73	40	7.6	55	7.48	100	7.48	150	7.49	260
	10	10.47	50	10.5	75	9.84	120	9.84	190	10.27	325
	12.5	12.47	65	12.67	90	12.49	150	12.49	240	12.84	375
	15	14.92	40	14.67	55	15.09	100	15.09	150	15.11	260
	20	20.21	50	20.25	75	19.84	120	19.84	190	20.73	325
	25	24.07	65	24.44	90	25.19	150	25.19	240	25.90	375
	30	29.33	65	30.31	100	30.24	175	30.24	250	30.67	375
	40	40.09	65	39.29	90	40.13	150	40.13	240	41.26	375
	50	48.86	65	48.71	100	48.18	175	48.18	250	48.86	375
	60	58.36	65	60.50	100	59.44	175	59.04	250	59.22	375

3-stage Helical Hypoid Gear	Model No	OTS 050(3)		OTS 063(3)		OTS 075(3)		OTS 090(3)		OTS 110(3)	
	Hollow Output Shaft Size	Ø25 x 92mmL (Ø20 Customised)		Ø25 x 112mmL		Ø28 x 120mmL		Ø35 x 140mmL		Ø42 x 155mmL	
	Nominal Gear Ratio (1/X)	Actual Gear Ratio (1/X)	Output Torque (Nm)	Actual Gear Ratio (1/X)	Output Torque (Nm)	Actual Gear Ratio (1/X)	Output Torque (Nm)	Actual Gear Ratio (1/X)	Output Torque (Nm)	Actual Gear Ratio (1/X)	Output Torque (Nm)
	75	74.62	40	73.33	55	75.45	100	75.45	150	75.55	260
	100	101.04	50	101.27	75	99.22	120	99.22	190	103.64	325
	125	120.34	65	122.22	75	125.95	150	125.95	240	129.48	375
	150	146.67	65	151.56	100	151.20	175	151.20	250	153.33	375
	200	200.44	65	196.43	90	200.66	150	200.66	240	206.29	375
	250			243.57	100	240.89	175	240.89	250	244.29	375
	300					297.21	175	295.18	250	296.10	375



Pulse Train
EtherCAT®

DIGITAX SF

LOW POWER, EASY TO USE SERVO SOLUTIONS

AC DRIVES, SERVO

NEW

DRIVE OBSESSED



DIGITAX-SF EtherCAT®
SERVO MOTOR RATING 50W TO 2KW

FEATURES & BENEFITS

- High performance servo control – Pulse | EtherCAT.
- Easy set-up tuning and state monitoring with Digitax SF Connect (Pulse) and S-Tune II (EtherCAT).
- Advanced damping and resonance suppression with notch filters and FFT analysis.
- Magnetic encoder offers reliable performance in applications that require broad temperature specifications, high shock and vibration resistance, robust sealing, and contaminant protection.
- Optional Brake and Absolute Encoder.

SERVO DRIVE SPECIFICATIONS

Origin	Nidec Japan
Servo Capacity & Speed	50W ● 100W (3000rpm) 200W ● 400W ● 750W (3000rpm) 1kW ● 1.5kW ● 2kW (2000rpm)
Driver Input Voltage	1Ø 220V 50Hz/60Hz (50W~1kW) 3Ø 220V 50Hz/60Hz (1kW~2kW) (DC24V for digital display on Amplifier)
Display	Built-in keypad with 6 digit 7-segment status display for easy startup, parameter setting, and tuning
Resolution	17-bit single turn (17-bit incremental) (The product can function as a multi-turn absolute type when batteries are added)
Control Signal	8-point inputs whose functions are switched by the control mode. 8-point outputs whose functions are switched by the control mode. Standalone : Built-in 16-point positioning table for simple machine control without PLC.
Analogue Signal	Single ended (-10V) input whose functions can be switched by the control mode
Pulse Signal (Input)	RS-422 differential Open-collector
Pulse Signal (Output)	Encoder feedback pulse (A-/B-/Z-phase), RS-422 differential output, Z-phase pulse through open-collector

POWER	AMPLIFIER MODEL		SERVO MOTOR MODEL (INERTIA LEVEL)		
	PULSE TRAIN	ETHERCAT	LOW	MEDIUM	HIGH
50W	DA2YZ23	DB6YZ41	--	MY500	--
100W	DA2Z123	DB6Z141	--	MY101	--
200W	DA21223	DB61241	MX201	--	MZ201
400W	DA22423	DB62441	MX401	--	MZ401
750W	DA23823	DB63841	MX751	--	MZ751
1kW	DA24A23	DB64A41	--	MM102	MH102
1.5KW	DA26B23	DB66B41	--	MM152	MH152
2KW	DA28C23	DB68C42	--	MM202	--

CONTROL MODE :
POSITION | VELOCITY | TORQUE CONTROL

Pulse Train Command	Control Mode : Position
Internal Command	Control Mode : Position Velocity
Analogue Command	Control Mode : Velocity Torque

COMMUNICATION

Communications [Digitax-SF Connect] Software for Pulse Train servo.
[S-Tune II] Software for EtherCAT servo.
(License Free Software | Windows 10 compatible)
PC-USB interface for parameter settings, tuning, and status display.

RS-485 : host remote control communication (multi-drop compatible).



Interface	EtherCAT® Pulse Train Analogue
Power & Encoder Cable	High flexible dynamic cable type - cable length from 1m, 3m, 5m, 10m, 15m and 20meter.
Connector	50-pin connector for CN1

STANDARDS

Approvals CE, EU/EC Directive, UL, KC, CCC

MOTOR ENCLOSURE PROTECTION

IP Rating IP65 or IP67

SERVO DRIVE ACCESSORIES

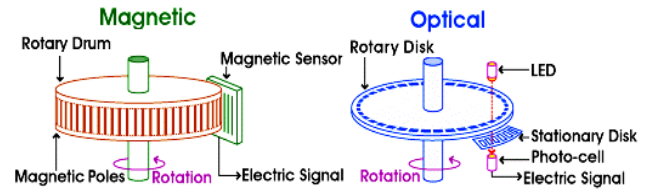


CT50P-S & CT50P-1M
CN1 Terminal Block with cable (50pin)

FEATURES & BENEFITS



- 1 **Digitax SF Connect is license-free commissioning software**, and Windows 10 compatible. It offers simple parameter setting, tuning and diagnostics.
- 2 **Parameters sharing among DSF servo amplifiers 50W to 2kW.** (Re-enter of parameters in the software is not required).
- 3 **Motion Waveform with graph and FFT frequency analysis** enable easy-monitoring of servo operation condition and status.
Motion waveform graphic data include : Position Deviation, Speed Command, Speed Feedback and Torque Command.



- 6 **Nidec servo motor come with Magnetic type encoder** rugged and copes very well with shock and vibration, while being unaffected by the ingress of oil, dirt, and moisture.



- 7 **In-house technical support** and service available, including selection of servo drives for your application, and motion control requirement (PLC, HMI and SCADA)
- 8 **Standard 12month product warranty**
- **Extended product warranty to 18months** available on Project basis for Nidec Servo Digitax-SF Series



- 4 **Servo Demo set, Briefing and Training sessions** are available to demonstrate the servo's core features and capabilities, including the Digitax-SF Connect commissioning software.



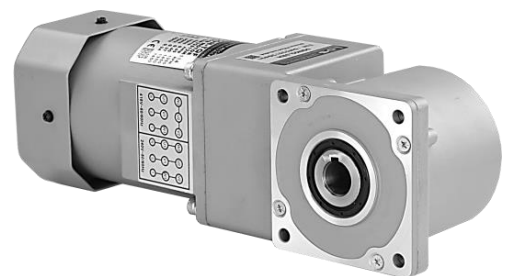
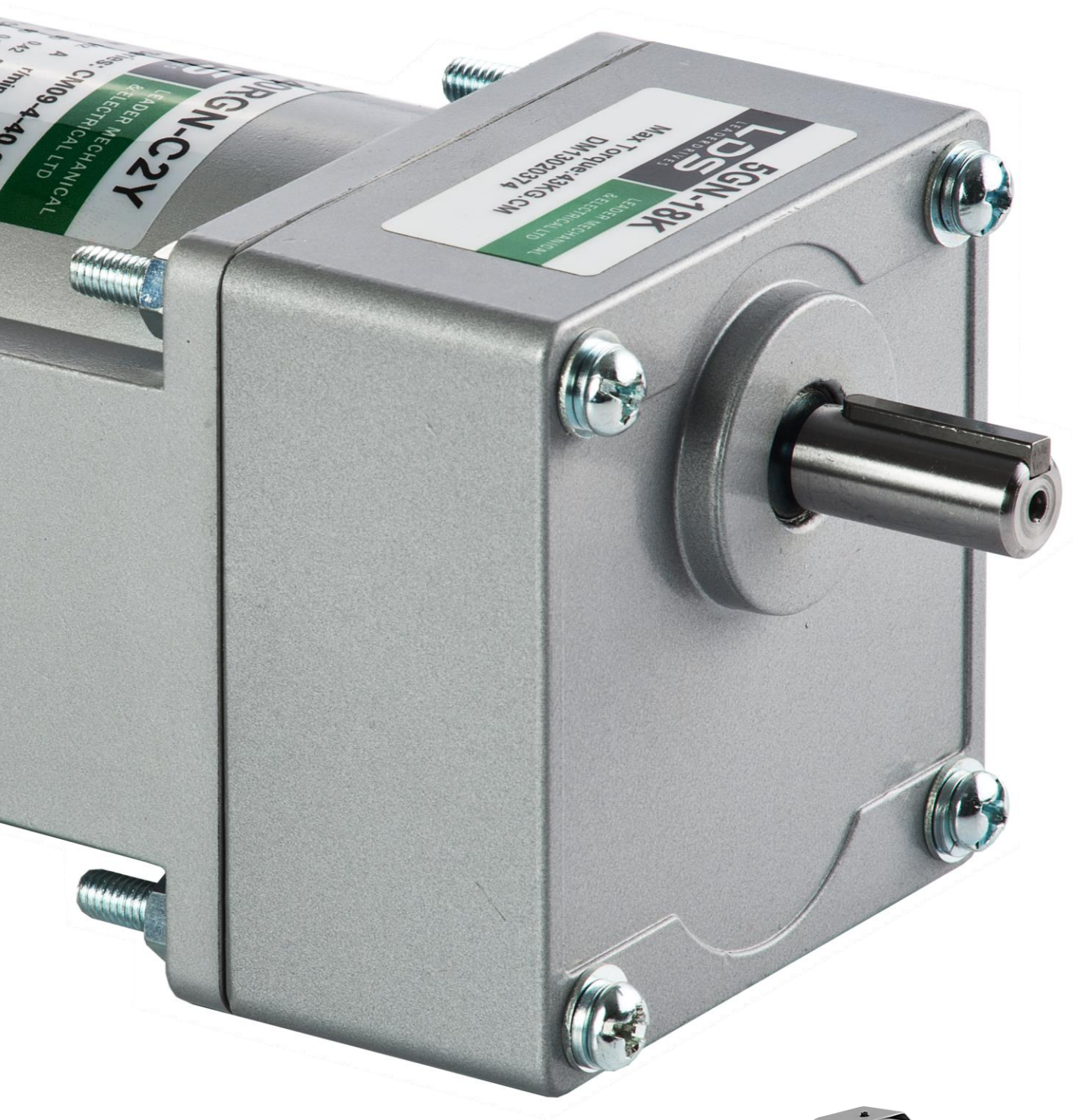
- 9 **Diverse ranges of precision servobox** compatible with Nidec Servo Motor are readily available. Servobox designs include inline shaft, right-angle, rotary flange, hollow actuator, spiral bevel, hypoid gear, cycloidal drive and strain wave gear designs.
- **Servobox improves your output torque and inertia level**, instead of using an expensive higher power servo motor. (Cost-saving and energy saving benefits).



- 5 **2D/3D drawing (AUTOCAD and STEP file format)** are available for Nidec Servo Drives to simulate, test and validate your designs to reduce costs from quality problems, errors etc.



- 10 **Full ranges of Digitax SF Servo Drives** are available exstock for your immediate production requirement.



LDS
LEADERDRIVES

COMPACT GEAR MOTOR
HIGH PERFORMANCE | MINI DRIVE



COMPACT AC GEAR MOTOR

Motor Rating : 6W ● 15W ● 25W ● 40W ● 60W ● 90W
120W ● 150W ● 180W ● 200W ● 250W



MOTOR DESIGN

- Induction Motor
- Reversible Motor
- Speed Control Motor
- Inverter Motor
- ElectroMagnetic Brake Motor
- Clutch and Brake Motor

MOTOR INPUT VOLTAGE

- 1ph100V (110V)
- 1ph220V (240V)
- 3ph200V (220V)
- 3ph400V (415V)

MOTOR OUTPUT SPEED

- 2-Pole (2780RPM)
- 4-Pole (1350RPM)
- 6-Pole (950RPM)

GEARHEAD TYPE

- Parallel Shaft Gearhead
- Hinge Type Gearhead
- Spiral Bevel Gearhead
- Worm Gearhead

MOTOR ENCLOSURE PROTECTION

- IP20
- IP55 (WP – Watertight Protection)



Induction Motor & Reversible Motor
(D-cut shaft | Key-shaft)



Customised Motor
with special output shaft
(customised shaft)



Parallel Shaft Gearhead
with ElectroMagnetic Brake
motor



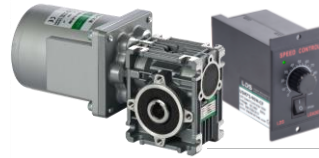
Parallel Shaft Gearhead
with Clutch & Brake (DC24)
and motor



Parallel Shaft Gearhead
with 3phase motor and
1phase Compact Inverter



Spiral Bevel Gearhead
(Right-Angle) with motor and
USP72 Speed Controller



Worm Gearhead
(Right-Angle) with motor
and USM72 Controller



Hinge Type Gearhead
with motor, terminal box and
1phase Frequency Controller



IGBT Series
1phase Compact Inverter
Panel Mount



FC400 Series
1phase Frequency Controller
Panel Mount



DSC72 Series
1phase Speed Controller
(Din-rail Type)



SD62 | SS62 Series
1phase Speed Controller
8Pin (Din-rail Type)



COMPACT AC GEAR MOTOR

K SERIES

KEY SPECIFICATIONS OF COMPACT MOTOR



Motor Power (Watt)	Motor Frame Size	Motor output Shaft Dia. (or pinion)	Motor Type					
			Induction (optional WP)	Reversible	Variable Speed	Inverter / Asynchronous	Electro-Magnetic Brake	Clutch & Brake
6W	60x60mm	6mm	•	•	•		•	
15W	70x70mm	6 or 8mm	•	•	•		•	
25W	80x80mm	8mm	•	•	•	•	•	
40W	90x90mm	10 or 11mm	• (WP)	•	•	• (WP)	•	•
60W	90x90mm	11 or 12mm	• (WP)	•	•	• (WP)	•	•
90W	90x90mm	11 or 12mm	• (WP)	•	•	• (WP)	•	•
120W	90x90mm	11 or 12mm	• (WP)	•	•	• (WP)	•	•
150W	90x90mm	11 or 12mm	•	•	•	•	•	•
180W	90x90mm	11 or 12mm	•	•	•	•	•	•
200W	104x104mm	14mm	•	•	•	•	•	
250W	104x104mm	14mm	•	•	•	•	•	

Motor Power (Watt)	Motor with Terminal Box	Motor Input Voltage (50Hz / 60Hz)				Motor Output Speed @ 50Hz (±10%)*			Parallel Shaft Gearhead Output Shaft Size (Dia.)
		1ph110V	1ph240V	3ph220V	3ph415V	2750rpm (2P)	1350rpm (4P)	950rpm (6P)	
6W		•	•				•		8mm
15W		•	•				•		10mm
25W	•	•	•	•	•	•	•		10mm
40W	•	•	•	•	•	•	•	•	12mm
60W	•	•	•	•	•	•	•	•	12 or 15mm
90W	•	•	•	•	•	•	•	•	12 or 15mm
120W	•	•	•	•	•	•	•	•	12 or 15mm
150W	•	•	•	•	•	•	•	•	12 or 15mm
180W	•	•	•	•	•	•	•	•	12 or 15mm
200W	•		•	•	•		•		15 or 18mm
250W	•		•	•	•		•		15 or 18mm

PARALLEL SHAFT GEAR REDUCER – GEAR REDUCTION RATIO



Standard Gear Reducer (Square Frame Size)



5GU-K Hinge Type Gear Reducer

2GN-K • 3GN-K • 4GN-K • 5GN-K • 5GU-KB • 5GU-K • 6GN-K • 6GU-KB-S18

Parallel Shaft Gear Reducer Ratio and Output Shaft Rotation Speed Guideline (Based on 4Pole Motor, 50Hz)

Gear Reduction Ratio	[2.1]	3	[3.6]	[4.2]	5	6	7.5	9	10	12.5	15	18
Output Speed - RPM	643	450	375	321	270	225	180	150	135	108	90	75
Gear Reduction Ratio	20	25	30	36	40	50	60	75				
Output Speed - RPM	67	54	45	37.5	33.7	27	22.5	18				
Gear Reduction Ratio	90	100	120	150	180	200*	240*	<300>			(360 ~ 24,000)	
Output Speed - RPM	15	13.5	11.3	9	7.5	6.7	5.6	4.5			(0.05~ 3.75rpm)	

Note [] Gear Reduction Ratio 2.1, 3.6 and 4.2 in installed with motor with 9T shaft (40W ~ 180W).
 * Ratio 200 and 240 is not available for 200W and 250W motor.
 < > Ratio 1/300 is available for 6W and 25W motor only.
 () Double Gear Reduction for 40W to 180W motor only. (Parallel Shaft Gear Reducer + Decimal Gear Reducer)

COMPACT SPIRAL BEVEL GEAR MOTOR

25W ~ 250W | Gear Reduction Ratio 7.5 ~ 225



Motor output power : 25W to 250W.

- > Induction Motor
- > Speed Control Motor
- > Inverter Motor
- > Electromagnetic Brake Motor
- > Clutch Brake Motor

Spiral bevel gear design offers constant backlash throughout the service life of the gearbox.

- * Quiet operation and longer lifespan
- * Higher efficiency and output torque
- * Lower operating temperature

Gearbox design with smooth and clean surface without any protrusions.

Ideal design for sanitary environment with quicker and easier cleaning process. It reduces operating costs specially in food processing applications.



Compact Right Angle Spiral Bevel Gear Reducer Model :

Motor Rating (Watt)	Frame Size	Mounting PCD	Hollow Output Shaft Bore Dia. x Length
25W	80x80mm	94mm	Dia.15mm x 82mmL
40W~180W	90x90mm	104mm	Dia.17mm x 86mmL
200W~250W	104x104mm	120mm	Dia. 22mm x 103mmL



Gearbox Engineering



Technical Support And Collaboration



High Efficiency Performance



1 Year Product Warranty

SPIRAL BEVEL GEAR REDUCER – GEAR REDUCTION RATIO

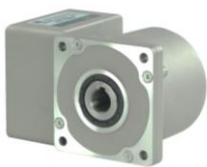
4GN-RH (4IK – 25W) ▪ 5GN-RH ▪ 5GU-RH (5IK – 40W ~ 180W)

Spiral Bevel Gear Reducer Ratio and Output Shaft Rotation Speed Guideline (Based on 4Pole Motor, 50Hz)

Gear Reduction Ratio	6*	9	15	18	22.5	27	37.5	45	54	75	90
Output Speed - RPM	225	150	90	75	60	50	36	30	25	18	15

Gear Reduction Ratio	108	150	180	225	(270)	(375)	(450)	(540 ~ 22,500)
Output Speed - RPM	12.5	9	7.5	6	5	3.6	3	(0.06 ~ 2.5rpm)

Note : () – Double Gear Reduction Ratio (Parallel Shaft Gearhead + Decimal Gearhead)

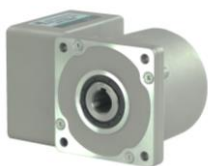


6GU-RH (6IK – 200W ~ 250W)

Spiral Bevel Gear Reducer Ratio and Output Shaft Rotation Speed Guideline (Based on 4Pole Motor, 50Hz)

Gear Reduction Ratio	7.5	9	12.5	15	18	25	30	37.5	45	63
Output Speed - RPM	180	150	108	90	75	54	45	36	30	21

Gear Reduction Ratio	75	95	120
Output Speed - RPM	18	14	11



COMPACT WORM GEAR MOTOR

40W ~ 250W | Gear Reduction Ratio 5 ~ 100



Motor output power : 40W to 250W.

- > Induction Motor
- > Speed Control Motor
- > Inverter Motor
- > Electromagnetic Brake Motor
- > Clutch Brake Motor

Worm gears are utilized as a part of applications where vast gear reductions, torque, and braking are important.

- * The most common worm gears made with a brass wheel and a steel worm.
- * Motion transfer of 90 Degrees
- * Ability to handle large gear reduction ratios
- * Self locking feature for high reduction ratio
- * An economical gear solution with lower upfront cost
- * Low noise operation



Motor with worm gear head
(Single reduction ratio 1/5 to 1/80)



Motor with double gear reduction
Gear Ratio from 1/100 to 1/19,200
(Parallel shaft + Worm Gearhead)



Double Gear
Reduction
(Conventional
Design)

Right Angle Worm Gear Reducer Model :

Motor Rating (Watt)	Frame Size (W x H)	Mounting PCD	Hollow Output Shaft Bore Dia. x Length
8MRV030/DMRS030	80 x 97mm	65mm	Dia. 14mm x 63mmL
8MRV040/DMRS040	100 x 122mm	75mm	Dia. 18mm x 78mmL
8MRV050/DMRS050	120 x 144mm	85mm	Dia. 25mm x 92mmL
8MRV063/DMRS063	145 x 174mm	95mm	Dia. 25mm x 112mmL

WORM GEAR REDUCER – GEAR REDUCTION RATIO



Worm Gearhead with CM type input adapter

8MRV030 - 8MRV040 - 8MRV050 - 8MRV063 | DMRS030 - DMRS040 - DMRS050 - DMRS063
Worm Gear Reducer Ratio and Output Shaft Rotation Speed Guideline (Based on 4Pole Motor, 50Hz)

Gear Reduction Ratio	5	7.5	10	15	20	25	30	40	50	60
Output Speed - RPM	270	180	135	90	67.5	54	45	33.7	27	22.5



Worm gearhead with CG type input adapter

Gear Reduction Ratio	80	[100]	(135)	(150)	(180)	(225)	(270)	(300 ~ 19,200)
Output Speed - RPM	16.8	13.5	10	9	7.5	6	5	(0.07 ~ 4.5rpm)

Note : [] – Ratio 1/100 is available for #050 and #063 series only
() – Double Gear Reduction Ratio (Worm Gearhead + Parallel Shaft Gearhead)

IGBT INVERTER

LDS 1-Phase IGBT-K100 / IGBT-K200 Series (Panel Mount Type)

- > Motor Rating : Maximum Up to 250W (1/3HP)
- > Input Voltage : AC 1phase 240V, 50Hz/60Hz
- > Output Voltage : AC 3phase 240V
- > Frequency Range : 0.1 ~ 400Hz.
- > 150% Overload Protection
- > Same dimension and mounting with Unit Type AC Speed Controller (USM series).



IGBT Inverter

COMPACT IGBT INVERTER FEATURES

1	LED Digital Display	Display of Running Frequency "0 ~ 400Hz" ▪ Output Ampere ▪ Motor RPM ▪ Machine Output Speed
2	Energy Saving	YES
3	Low Operation Temperature	YES
4	Higher motor starting torque (150%)	YES
5	Higher motor efficiency (75%~85%)	YES
6	FWD / REV Running Direction	YES
7	Motor Overload Protection	YES - (150% / Adjustable by User)
8	Acceleration & Deceleration of Speed	YES - Adjustable btw 0.1 ~ 3200 seconds
9	FWD / REV Running Direction	YES (Multiple Terminal or SPEC Key)
10	Quick-Stop Operation	YES (From 0.1 Second)
11	Flexible Running Speed Range	YES (0.1 ~400Hz)
12	Multiple Speed Setting	YES (Max 3 Speeds)
13	Multiple Speed Setting at Different Running Direction	YES (Max 2 Speeds)
14	Switching Frequency (PWM)	YES
15	External VR Control / SPEC Key	YES
16	Alarm Signal to PLC	YES
17	DC10V Supply	YES
18	Modbus Communication	YES



Portable Keypad with Ethernet cable



Enable space & cost saving control panel and easier monitoring of inverter operation

COMPACT GEARHEAD OPTION



Parallel Shaft Gearhead
(Helical Gear)
Gear Reduction Ratio
1/2.1 : 1/240



Hinge Type Parallel Shaft Gearhead
Gear Reduction Ratio
1/2.1 : 1/240



Worm Gearhead (Right Angle)
Gear Reduction Ratio
1/5 : 1/100



Spiral Bevel Gearhead (Right Angle)
Gear Reduction Ratio
1/6 : 1/225

* Double Gear Reduction from 1/300 to 1/19200 available upon request



LDS[®]
LEADERDRIVES
IGBT INVERTER
25W ~ 200W

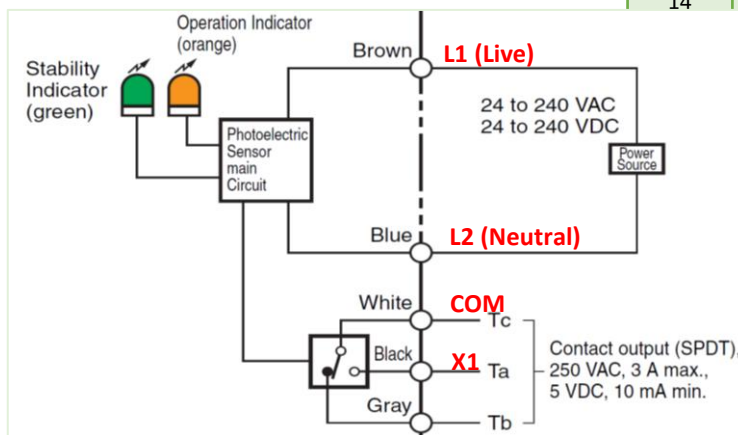
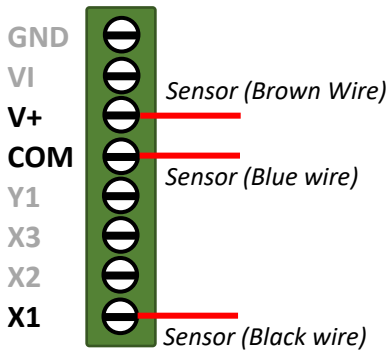
IGBT User Quick Guide

Easy operation via
Step-by-Step Guide
for Parameter setting,
wiring method,
error troubleshooting.

How to use Sensor Relay to stop operation by using Jog Speed Setting (Motor rotation is stopped in shorter time compared to Coast to Stop function)

F2.16 set to [0]
F2.19 set to [0.1]
F5.19 set to [1]

Sensor Relay between Terminal X1 and Com



Step	Action	Screen Display (after action)	Remark
		0.00	When Inverter is powered on. (Initial Screen Display)
1	Press tekan	F0.00	Press [MODE] to display Operation Status [F0.00] System Parameter
2	Press tekan	F2.00	Press [Δ] to parameter [F2.00] Frequency Parameter
3	Press tekan	F2.00	Press [<<] to shift digit of Parameter : [F2.00]
4	Press tekan	F2.16	Press [Δ] to parameter [F2.16] Jog Speed (Refer to Page 20)
5	Press tekan	6.00	Press [FUNC/DATA] to enter Parameter F2.16 Default Setting [6.00] Hertz
6	Press tekan	6.00	Press [<<] twice to shift digit of frequency command : [6.00]
7	Press tekan	0.00	Press [∇] to new command [0.00] JogSpeed at Zero Hertz Refer to page 20
8	Press tekan	F2.16	Press [FUNC/DATA] to complete the new parameter change.
9	Press tekan	F2.19	Press [Δ] to parameter [F2.19] Primary Deceleration Time (Refer to Page 21)
10	Press tekan	2.0	Press [FUNC/DATA] to enter Parameter F2.19 Default Setting [2.0]
11	Press tekan	0.1	Press [∇] to new command [0.1] Deceleration time at 0.1second
12	Press tekan	F2.19	Press [FUNC/DATA] to complete the new parameter change.
13	Press tekan	F2.19	Press [<<] to shift digit of frequency command : [F2.19] Frequency Parameter
14	Press tekan	F5.19	Press [Δ] to parameter [F5.19] Multi-Function Input Terminal X1 (Refer to Page 29)
	Press tekan	22	Press [FUNC/DATA] to enter Parameter F5.19 Default Setting [22]
	Press tekan	1	Press [∇] to new command [1] Jog Speed Command Refer to page 29
	Press tekan	F5.19	Press [FUNC/DATA] to complete the new parameter change.
	Press tekan	0.00	Press [PROG] to return to Initial Display Screen

INVERTER MOTOR

Compact Motor Rating : 25W ▪ 40W ▪ 60W ▪ 90W
120W ▪ 150W ▪ 180W ▪ 200W ▪ 250W

- Panel mount type compact IGBT Inverter with LED digital display
- Controller Input Voltage : AC 1ph 220V ~ 240V, 50Hz/60Hz
Motor Input Voltage : AC 3ph 220V, 50Hz/60Hz
- **Key features of LDS Compact Motor with Compact IGBT Inverter**
 - > Compact design inverter with LED digital Display for energy saving operation.
 - > 120%~150% Motor Overload Protection with alarm signal via ampere setting.
 - > Password and Parameter locking enabled.
 - > Adjustable acceleration and deceleration of speed provide soft-starting and stopping.
 - > Allows DC braking and Multiple speed setting (0Hz ~ 400Hz).
 - > External keypad available for parameter duplication and distance control.
 - > Direct replaceable - same size and mounting with major speed control motors (and replacement for DC motor with controller is possible).



IGBT Inverter

INVERTER / FREQUENCY CONTROLLER OPTIONS

NEW



FC400 Series Frequency Controller (LDS)

- > Panel mount type compact MCU Frequency Controller with digital display
- > Motor Rating : 25W ~ 400W
- > Input Voltage : 1phase 220V, 50Hz/60Hz.
- > Output Voltage : 3phase 220V (0Hz ~ 100Hz)

Key Features :

- > Low cost with compact design controller for simple operation requirement.
- > Economical construction with basic controller functions with consistent performance.
- > Allow acceleration and deceleration of speed to provide soft-starting and stopping.
- > Direct replaceable - same size and mounting with major speed control motors (and replacement for DC motor with controller is possible).

NEW



COMMANDER S100 Series (Control Techniques by Nidec Group)

- > Din Rail Type Variable Frequency Inverter
- > Motor Rating : 25W to 4kW
- > Input Voltage : 1phase 100V~110V / 1phase 220V~240V, 45Hz~66Hz.
3phase 220V / 3phase 415, 45Hz~66Hz.
- > Output Voltage : 3phase 220V / 3ph415V (0Hz ~ 300Hz)

Key Features :

- > Compact and robust design from UK.
- > Mobile NFC Enabled for Parameter setting & commissioning via the Marshal Apps (Android/iOS), including sharing/cloning/download/upload of parameter and data, offline commissioning.
- > Provide 150% Motor Overload Protection (60seconds from Cold / 8seconds from Hot).
- > Multiple input voltages available from 110V, 220V and 415V.
- > Space saving configuration where inverter can be installed next to each other
- > CE and UL certified product.

CONTROL TECHNIQUES



NE200 Series ▪ NE300 Series (Control Techniques by Nidec Group)

- > Conventional Variable Frequency Inverter
- > Motor Rating : 25W to 900kW
- > Input Voltage : 1phase 220V, 50Hz/60Hz.
3phase 415, 50Hz/60Hz (0Hz to 550Hz)

Key Features :

- > Cost effective solution for conveyor, pump, mixer etc.
- > Easy operation and control via portable keypad panel.
- > Detachable keypad for panel mounting requirement.
- > Default keypad enables parameter duplication of distance control via ethernet cable.

VARIABLE SPEED MOTOR

Compact Motor Rating : 6W ▪ 15W ▪ 25W ▪ 40W ▪ 60W ▪ 90W
120W ▪ 150W ▪ 180W ▪ 200W ▪ 250W

● USP series controller is a Universal Controller compatible with other brand of speed controller including Oriental motor and Panasonic motor. USP controller offers direct replacement to use with these major motors without any modification*.

● Controller Input Voltage : AC 1ph 220V ~ 240V, 50Hz/60Hz
Motor Input Voltage : AC 1ph 220V ~ 240V, 50Hz/60Hz

● **Key features of Variable Speed Motor with USP Speed Controller**

- > Digital display shows real time motor speed (rpm) (optional setting) for ease of operation monitoring.
- > Allow acceleration and deceleration operation for soft-starting and soft-stopping.
- > Forward and reverse operation via digital setting (optional CW or CCW wiring).
- > Allow pre-set of Maximum/Minimum speed range between 150~1350rpm.



USP Universal Controller



USM71 Series ▪ USM72 Series (Speed Range 90~1350rpm)

- > Unit Type Analogue Speed Controller (Non-LED display) / Panel Mounting
- > Input Voltage : 1 phase 100V~110V (USM71) / 1 phase 220V~240V (USM72), 50Hz/60Hz.

Key Features :

- > Simplest configuration and operation for all users.
- > Forward and Reverse operation via CW-Com / CCW-Com connection.
- > Offers basic functions : Adjustable speed, Forward/Reverse Running, On-off operation.

NEW



DSC72 Series (Speed Range 150~1350rpm)

- > Din Rail Type Digital Display Speed Controller with external VR / Din Rail Mounting
- > Input Voltage : 1 phase 220V~240V, 50Hz/60Hz.

Key Features :

- > Compact size / Space-saving slim design for adjustable speed operation with digital display
- > Digital output terminal (for brake control (on/off), alarm / output signal when motor stop running).
- > Allow acceleration and deceleration operation for soft-starting and soft-stopping.
- > External Potentiometer (VR) enables long distance speed adjustment from controller.



SS61 Series ▪ SS62 Series (8pin) (Speed Range 90~1350rpm)

- > Din Rail Type Analogue Speed Controller with external VR / Din Rail Mounting
- > Input Voltage : 1 phase 100V~110V (SS61) / 1 phase 220V~240V (SS62), 50Hz/60Hz.

Key Features :

- > Compact design / space saving adjustable speed controller.
- > External VR enables long distance speed adjustment from controller.
- > Offers basic functions : Adjustable speed, Forward/Reverse Running, On-off operation



SD61 Series ▪ SD62 Series (8pin) (Speed Range 90~1350rpm)

- > Din Rail Type Analogue Speed Controller / Din Rail Mounting
- > Input Voltage : 1 phase 100V~110V (SD61) / 1 phase 220V~240V (SD62), 50Hz/60Hz.

Key Features :

- > Compact design / space saving adjustable speed controller.
- > Built-in Potentiometer (VR) reduces wiring and trunking demand in the panel box.



SS31 Series ▪ SS32 Series (11pin) (Speed Range 90~1350rpm)

- > Din Rail Type Analogue Brake Pack Speed Controller with external VR / Din Rail Mounting
- > Input Voltage : 1 phase 100V~110V (SS31) / 1 phase 220V~240V (SS32), 50Hz/60Hz.

Key Features :

- > Simple adjustable speed controller with electronic braking.
- > To stops the motor instantly with an electronic brake (trigger by current).
- > External Potentiometer (VR) enables long distance speed adjustment from controller.



COMPACT GEAR MOTOR

K SERIES

ACCESSORIES COMPREHENSIVE SELECTIONS



Mounting Bracket (Type-H)
Stainless Steel Made
For Compact IGBT Inverter &
USM Speed Controller

Mounting Bracket (Type-V)
Stainless Steel Made
For Compact IGBT Inverter &
USM Speed Controller

Mounting Bracket (Type-U)
Stainless Steel Made
For Compact IGBT Inverter &
USM Speed Controller

Acrylic Protective Cover
Design For IGBT Inverter
Acrylic Made



Axial AC Powerful Cooling Fan and Fan Guard
Input voltage: AC / DC
Protection Degree : IP20 / IP55

Mounting Bracket (Type-F)
Foot mounting bracket for
6W ~ 250W Gear Motor
F2#2 ▪ F2#3 ▪ F2#4 ▪ F2#5 ▪
F2#6

Quality Bearing and Viton Oil Seal
for optimum rotary shaft
performance and lifespan of
gear motor in rugged operation
condition

VR / Potentiometer
Variable Resistor/Potentiometer
c/w Dial Plate and Knob



Protective Enclosure
For Aluminium Worm Gear
Reducer
8MRV030 ▪ 8MRV040

Low Speed Output Shaft
SS (Single Shaft) ▪ DS (Double
Shaft)
#30SS ▪ #40SS ▪ #50SS ▪ #63SS
#30DS ▪ #40DS ▪ #50DS ▪ #63DS

Torque Arm
for Worm Gear Reducer
Option : Nylon Bush
#30TA ▪ #40TA ▪ #50TA ▪ #63TA

Aluminium Output Flange
for Worm Gear Reducer
#30F ▪ #40F ▪ #50F ▪ #63F

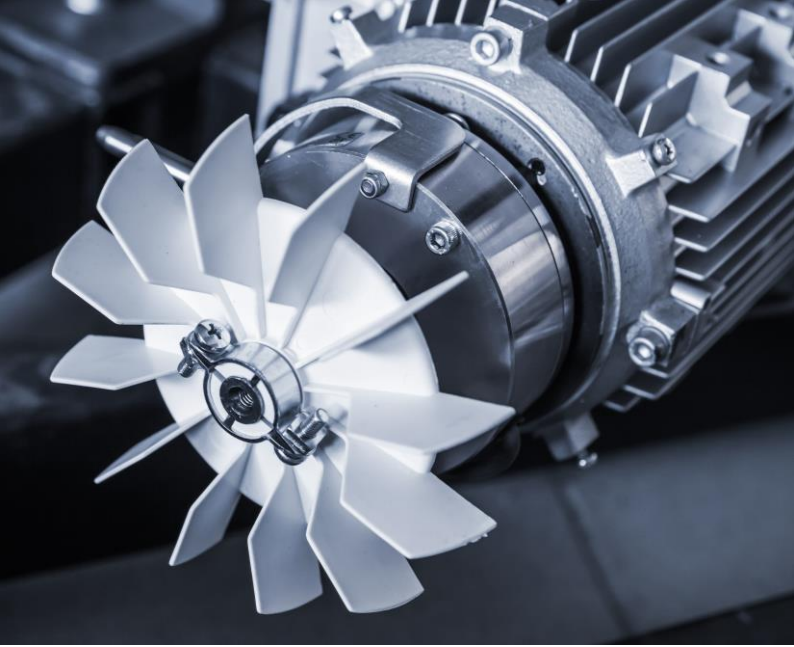


Capacitor – 4pin
0.8 ~ 24 Microfarad
250V ▪ 400V

Terminal Box
with cable gland IP54
for compact gear motor
25W ~ 250W

Extension Cable
for Variable Speed Motor &
Speed Controller, available in
1m ▪ 1.5m ▪ 2m ▪ 3m length

ABS & PVC Made Panel Box
Indoor Use Enclosure Box
For IGBT ▪ Nidec CT
Mitsubishi ▪ Panasonic Inverter



INTEGRAL HELICAL GEAR MOTOR



Integral Gear Motor design enables motor and gear reducer permanently coupled together. Its pinion gear driving the gearbox is directly mounted to the drive shaft of the motor to achieve shorter in axial length and lower weight.

Output Power :	0.1kW ~ 2.2kW (IE1)
Power Source:	3phase 200V ▪ 220V ▪ 240V ▪ 380V ▪ 415V ▪ 440V
Insulation Class:	B / F
Protection:	IP44 / IP54
Number of Pole :	4 Pole (1420rpm) ▪ 6Pole (900rpm)
Rating :	Continuous Rating
Gear Reduction Method:	Helical Gear
Lubrication:	Grease Lubrication (Maintenance Free)
Output Shaft :	New JIS Key (JIS 1301-1976 Class)
Output Shaft Material :	S43C
Case Material :	Aluminium Die-cast
Ambient Temperature:	-10°C ~ +40°C
Ambient Humidity :	85% Maximum
Environment :	Well ventilated place (In door use)
Mounting Direction :	Any direction
Electromagnetic Brake (DC) :	Brake with Rectifier 220V (Optional)
Conformity Certification :	CE / CCC



**FH Series
Foot
Mounting**



**FV Series
Flange
Mounting**



**FVA Series
Small Flange
Mounting**



FHB Series



FVB Series

FH ▪ FV ▪ FVA ▪ FHB ▪ FVB Series

Parallel Shaft Helical Gear Reducer Ratio and Output Shaft Rotation Speed Guideline (Based on 4Pole Motor, 50Hz)

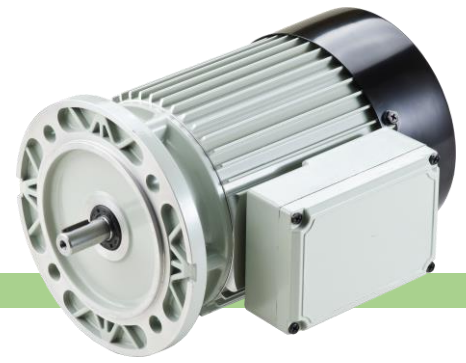
Gear Reduction Ratio	3	5	7.5	10	15	20	25	30	40	50
Gearbox Output Speed (RPM)	467	280	186	140	93	70	56	47	35	28
Gear Reduction Ratio	60	80	100	120	150	(180)	(240)	(300 ~ 24000)		
Gearbox Output Speed (RPM)	23	17.5	14.0	11.7	9.3	7.7	5.8	(0.05 ~ 3.75rpm)		



SMALL GEAR MOTOR

LDVF

ASYNCHRONOUS MOTOR ^{SERIES}
IEC DESIGN



GENERAL SPECIFICATIONS

Output Power :	0.1kW ~ 2.2kW (IE1)
Power Source :	3phase 220V ▪ 240V ▪ 380V ▪ 415V ▪ 440V
Insulation Class :	B / F
Protection :	IP44 / IP54
Number of Pole :	2Pole (2800rpm) ▪ 4 Pole (1420rpm) ▪ 6Pole (900rpm)
Rating :	Continuous Rating
Output Shaft :	New JIS Key (JIS 1301-1976 Class)
Output Shaft Material :	S43C
Case Material :	Aluminium Die-cast / Cast Iron
Ambient Temperature:	-10°C ~ +40°C
Ambient Humidity :	85% Maximum
Environment :	Well ventilated place (Indoor use)
Mounting Direction :	Any direction
Electromagnetic Brake (DC) :	Brake with Rectifier 220V (Optional)
Conformity Certification :	CE / CCC

Efficiency Classes:

IE1	Standard Efficiency
IE2	High Efficiency
IE3	Premium Efficiency
IE4	Super Premium Efficiency

Mounting Type :

B3	Foot Mounted
B5	Flange Mounted
B35	Foot and Flange Mounted
B14	C-Face Mounted
B34	Foot and C-Face Mounted

LDVF-WP Series Watertight Protection



ELECTROMAGNETIC CLUTCH & BRAKE

MODEL : EFVF-Z (YAN CO. LTD)

Electromagnetic clutch & brake
DUAL FLANGE (IEC FRAME COMPATIBLE – B5)
INPUT VOLTAGE : DC24V

EFVF-Z

SERIES



GENERAL SPECIFICATION	UNIT	MODEL				
		#015	#025	#050	#100	#200
Dynamic Friction Torque	Kgm	1.0	2.0	4.0	8.0	16
Static friction torque	Kgm	1.5	2.5	5.0	10	20
Maximum speed	Rpm	2,000	2,000	2,000	2,000	2,000
Compactible Motor (kW *4Pole)	kW	0.2kW/0.4kW	0.4kW/0.75kW	0.75kW/1.5kW	2.2kW/3.75kW	5.5kW/7.5kW
Unit Weight	Kg	4.39	7.35	10.7	19.55	32.6



THREE PHASE SQUIRREL CAGE INDUCTION MOTORS

MarelliMotori

IE1 – MAA/BAA SERIES 0.18KW ~ 200KW



B3
Foot Mounting



B5
Flange Mounting



B35
Foot & Flange Mounting



B34
Foot & Small Flange Mounting



B14
Small Flange Mounting

TECHNICAL CHARACTERISTICS

MATERIALS

FRAME SIZE	63	71	80	90	100	112	132	MAA - 160	BAA - 160	180	200	225	250	280	315
Frame	ALUMINIUM								CAST IRON						
Enshield D.E & N.D.E									CAST IRON						
Fan Cowl									STEEL						
Fan									PLASTIC						
Terminal Box	ALUMINIUM								CAST IRON						

MAA SERIES

CABLE GLANDS

FRAME SIZE	63	71	80	90	100	112	132	160
Qty	1	1	1	2	2	2	2	2
Type	M16	M20	M20	M20	M20	M25	M25	M32

BEARINGS

FRAME SIZE	63	71	80	90	100	112	132	160
Poles	2 - 8	2 - 8	2 - 8	2 - 8	2 - 8	2 - 8	2 - 8	2 - 8
D-end	6201	6202	6204	6205	6206	6206 or 6306	6208 or 6308	6309
N-end	6201	6202	6204	6205	6206	6206 or 6306	6208	6309

PERFORMANCES AT 50 Hz and 60 Hz

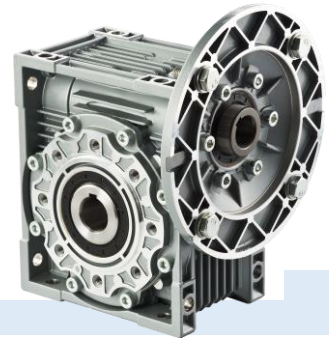
Motor type	Standard voltage and frequency of windings	Supply voltage connection and frequency	Rated output	Rated speed	Rated torque at the frequency of the network Tn	Starting torque Ts / Tn	Breakdown torque Tmax / Tn
MAA 63 - 160	230 / 400V	220V / 50Hz	1	1	1	0,9	0,9
	230 / 400V	240V / 50Hz	1	1	1	1,1	1,1
	230 / 400V	380V / 50Hz	1	1	1	0,9	0,9
	230 / 400V	400V / 50Hz	1	1	1	1	1
	230 / 400V	415V / 50Hz	1	1	1	1,1	1,1
	230 / 400V	440V / 60Hz	1,1	1,2	0,9	0,8	0,9
	230 / 400V	460V / 60Hz	1,1	1,2	0,9	0,9	1
	230 / 400V	480V / 60Hz	1,2	1,2	1	1	1



SMALL GEAR MOTOR

DMRV (DMRS) SERIES

WORM GEAR REDUCER UNIVERSAL DESIGN



The Worm Gear Reducer is designed with high thermal capacity die-cast aluminium housings for exceptional heat dissipation. It uses high efficiency gear design to create maximum torque output in a highly compact package. The housings come with a rust-free powder coat paint finishing.



Aluminium Worm Gear Reducer Ratio and Output Torque (Single Reduction, Based on 4Pole Motor, 50Hz)

Gear Reduction ratio (i)	Output Speed (RPM)	# 030 Series			# 040 Series			# 050 Series			# 063 Series			Gear Reduction ratio (i)	Output Speed (RPM)
		Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)		
5	284	0.2	5.3	3.4	0.4	11.2	3	0.75	22.8	2.7	1.5	46	2.0	5	284
7.5	189	0.2	7.8	2.3	0.4	16	2.4	0.75	34	2.1	1.5	68	1.9	7.5	189
10	142	0.2	10	1.8	0.4	21	1.9	0.75	44	1.6	1.5	89	1.5	10	142
15	95	0.2	14	1.3	0.4	31	0.8	0.75	63	1.2	1.5	127	1.1	15	95
20	71	0.2	18	1.0	0.4	39	1.0	0.75	81	0.9	1.5	166	0.8	20	71
25	57	0.2	21	1.0	0.4	47	0.8	0.75	96	0.9	1.1	146	0.9	25	57
30	47	0.2	24	0.8	0.4	53	0.8	0.75	110	0.9	1.1	167	1.0	30	47
40	36	0.12	19	0.9	0.2	44	0.9	0.4	68	1.1	0.75	143	1.0	40	36
50	28	0.12	23	0.8	0.2	47	0.8	0.4	80	0.9	0.75	169	0.9	50	28
60	24	0.09	19	0.9	0.18	43	0.8	0.4	89	0.8	0.4	102	1.2	60	24
80	18	0.06	14	0.9	0.12	34	1.0	0.25	57	1.1	0.4	124	1.1	80	18
100	14	-	-	-	-	-	-	0.2	60	0.9	0.4	139	0.9	100	14

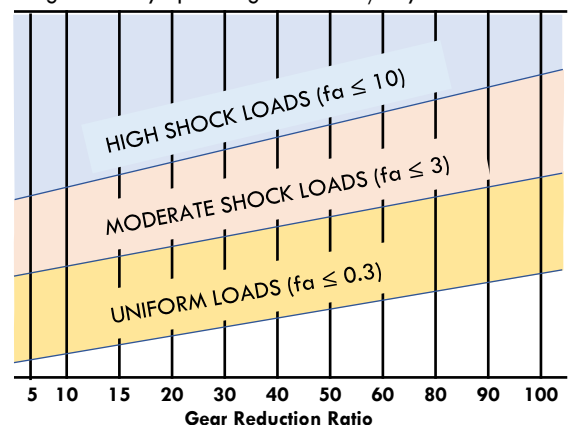
Gear Reduction ratio (i)	Output Speed (RPM)	# 075 Series			# 090 Series			# 110 Series			# 130 Series			Gear Reduction ratio (i)	Output Speed (RPM)
		Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)		
5	284	-	-	-	-	-	-	-	-	-	-	-	-	5	284
7.5	189	4	182	1.0	4	184	1.6	7.5	345	1.3	7.5	349	2.1	7.5	189
10	142	3	180	1.1	4	243	1.3	7.5	455	1.1	7.5	455	1.8	10	142
15	95	3	261	0.8	4	352	1.0	5.5	484	1.4	7.5	668	1.4	15	95
20	71	1.5	168	1.3	4	458	0.8	5.5	638	0.9	7.5	880	1.0	20	71
25	57	1.5	205	1.0	3	420	0.8	4	573	1.0	7.5	1074	0.9	25	57
30	47	1.5	233	1.0	3	479	0.9	4	647	1.1	5.5	900	1.2	30	47
40	36	1.1	216	1.0	2.2	307	1.1	3	638	1.0	5.5	1171	0.9	40	36
50	28	0.75	175	1.2	2.2	368	0.9	3	767	0.8	4	1036	1.2	50	28
60	24	0.75	199	1.1	1.5	424	0.8	2.2	648	0.9	4	1179	0.8	60	24
80	18	0.4	130	1.3	0.75	258	1.1	1.5	548	0.9	2.2	816	1.0	80	18
100	14	0.4	149	1.1	0.75	302	0.9	1.1	473	1.0	2.2	966	1.0	100	14

Gear Reduction ratio (i)	Output Speed (RPM)	# 150 Series		
		Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)
5	284	-	-	-
7.5	189	-	-	-
10	142	15	921	1.3
15	95	11	990	1.3
20	71	11	1291	1.0
25	57	7.5	1074	1.1
30	47	7.5	1274	0.9
40	36	5.5	1171	1.3
50	28	5.5	1426	1.0
60	24	4	1195	1.1
80	18	4	1484	0.8
100	14	2.2	960	1.0

SERVICE FACTOR

	24Hr	16Hr	8Hr	2Hr
2.3	2	1.8	1.6	1.6
2.2	1.9	1.7	1.5	1.5
2.1	1.8	1.6	1.4	1.4
2.0	1.7	1.5	1.3	1.3
1.9	1.6	1.4	1.2	1.2
1.8	1.5	1.3	1.1	1.1
1.7	1.4	1.2	1.0	1.0
1.6	1.3	1.1	0.9	0.9
1.5	1.2	1.0	0.8	0.8

Length of daily operating time: hours/day

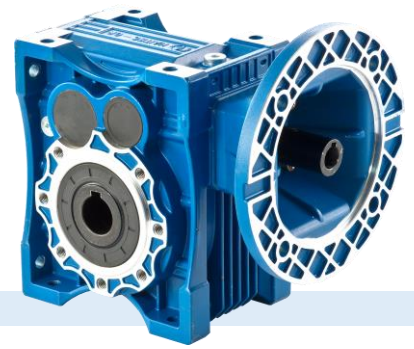




SMALL GEAR MOTOR

OTS SERIES

HELICAL HYPOID GEAR REDUCER UNIVERSAL DESIGN



The Helical Hypoid Gear Reducer offers higher transmission efficiency and longer lifespan compared to conventional IEC worm gear reducer. Having compactible design with IEC Worm Gear Reducer, it comes with high thermal capacity die-cast aluminium housings and offers gear reduction ratio up to 1/300.

Features:

- Helical Hypoid Gear design offer higher higher transmission efficiency and longer lifespan compared to conventional worm gear reducer.
- Higher Ratio Ranges from 1/7.5 ~ 1/300.
- More energy-saving and lower operating temperature.
- Smooth running operation with lower noise compared to worm gear reducer.
- Compactible mounting with IEC worm gear reducer.



Aluminium Helical Hypoid Gear Reducer Ratio and Permissible Output Torque (Single Reduction, Based on 4Pole Motor, 50Hz)

	Gear Reduction ratio (i)	Output Speed (RPM)	OTS #050(2) Series			OTS #063(2) Series			OTS #075(2) Series		
			Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)
2-Stage Gear Reduction	7.5	189	0.75	36	2.7	1.5	74	1.4	3	149	1.9
	10	142	0.75	47	2.5	1.5	96	1.4	3	205	1.7
	12.5	114	0.75	61	2.1	1.5	120	1.3	2.2	182	1.8
	15	95	0.75	73	1.8	1.5	142	1.3	2.2	221	1.5
	20	71	0.4	53	2.0	1.5	199	1.1	2.2	307	1.1
	25	57	0.4	60	1.6	0.75	114	1.7	1.5	239	1.5
	30	47	0.4	80	1.3	0.75	147	1.3	1.5	288	1.3
	40	36	0.4	104	1.0	0.75	193	1.0	0.75	206	1.7
	50	28	0.2	63	2.2	0.4	118	1.3	0.75	233	1.4
60	24	0.2	75	1.8	0.4	143	1.2	0.75	289	1.2	

	Gear Reduction ratio (i)	Output Speed (RPM)	OTS #050(3) Series			OTS #063(3) Series			OTS #075(3) Series		
			Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)	Rated Power (kW)	Output Torque (Nm)	Service Factor (SF)
3-Stage Gear Reduction	75	18.9	0.2	93	1.6	0.2	87	1.8	0.75	349	1.1
	100	14.2	0.2	120	1.1	0.2	115	1.7	0.4	246	2.1
	125	11.4	0.12	90	1.4	0.2	141	1.3	0.4	293	1.7
	150	9.5	0.12	113	1.2	0.2	176	1.2	0.4	353	1.3
	200	7.1	0.12	151	0.9	0.2	226	1.0	0.4	480	1.0
	250	5.7	0.12	185	0.7	0.12	188	1.1	0.2	277	1.2
	300	4.7	-	-	-	-	-	-	0.2	336	1.0

Worm Gear Reducer and Hypoid Gear Reducer Accessories



Low Speed Output Shaft

S : Single Output shaft (Left/Right)
D: Double Output Shaft

Torque Arm

Option : Nylon Bush

Aluminium Output Flange

#30F • #130F

Protective Cover

ELECTROMAGNETIC CLUTCH & BRAKE

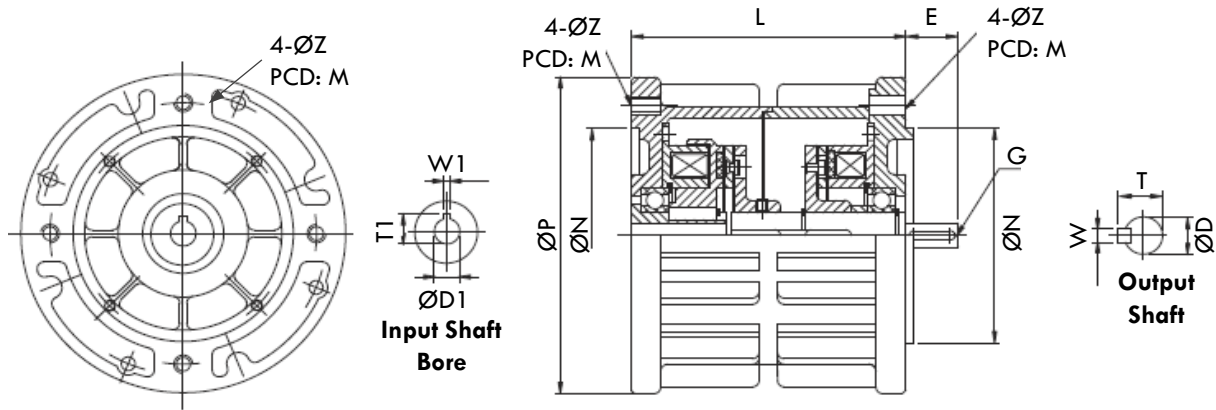
EFVF-Z

MODEL : EFVF-Z

ELECTROMAGNETIC CLUTCH & BRAKE

DUAL FLANGE (IEC FRAME COMPATIBLE – B5)

INPUT VOLTAGE : DC24V



		MODEL				
GENERAL SPECIFICATION	UNIT	#015	#025	#050	#100	#200
DYNAMIC FRICTION TORQUE	KGM	1.0	2.0	4.0	8.0	16
STATIC FRICTION TORQUE	KGM	1.5	2.5	5.0	10	20
MAXIMUM SPEED	RPM	2,000	2,000	2,000	2,000	2,000
COMPACTIBLE MOTOR (KW -4POLE)	KW	0.2KW/0.4KW	0.4KW/0.75KW	0.75KW/1.5KW	2.2KW/3.75KW	5.5KW/7.5KW
D (OUTPUT SHAFT DIA.)	MM	Ø11 / Ø14	Ø14 / Ø19	Ø19 / Ø24	Ø28	Ø38
WXT (KEYWAY AND OVERALL SHAFT HEIGHT)	MM	4X12.8 / 5X16.3	5X16.3 / 6X21.8	6X21.8 / 8X27.3	8X31.3	10X41.5
D1 (HOLLOW INPUT SHAFT BORE DIA.)	MM	Ø11 / Ø14	Ø14 / Ø19	Ø19 / Ø24	Ø28	Ø38
W1XT1 (KEYWAY AND OVERALL SHAFT HEIGHT)	MM	4X12.8 / 5X16.3	5X16.3 / 6X21.8	6X21.8 / 8X27.3	8X31.3	10X41.5
N (INPUT / OUTPUT PILOT DIA.)	MM	Ø110	Ø110/130	Ø130	Ø180	Ø230
E (OUTPUT SHAFT LENGTH)	MM	23 / 30	30 / 40	40 / 50	60	80
G (OUTPUT SHAFT SCREW HOLE TYPE)	MM	M4-DEEP15	M6-DEEP15			
L (BODY LENGTH)	MM	120	140	161	177	215
M (INPUT / OUTPUT FLANGE MOUNTING PCD)	MM	Ø130	Ø130 / Ø165	Ø165	Ø215	Ø265
P (INPUT / OUTPUT FLANGE DIA.)	MM	Ø160	Ø160/200	Ø200	Ø250	Ø300
Z (MOUNTING HOLE DIA.)	MM	Ø9	Ø9 / Ø11	Ø11	Ø13	Ø15
UNIT WEIGHT	KG	4.39	7.35	10.7	19.55	32.6

CONTROL 
TECHNIQUES



COMMANDER S

MAKING SIMPLE APPLICATIONS, SIMPLE.

AC DRIVES, GENERAL PURPOSE

DRIVE OBSESSED



COMMANDER S INVERTER

0.18 to 4 kW (0.25 to 5 hp)
1Ø 100 & 200 V, 3Ø 200 & 400 V
Linear V to F, square V to F, resistance compensation

Take charge of control and energy savings with the latest addition to the Control Techniques portfolio. With a feature set optimised for simple motion cycles, Commander S provides a cost-effective solution for applications that require plug and play control convenience straight from the box.

Commander S is the first drive to come with an app interface as a standard feature. The Marshal app is our revolutionary way to interface with the drive covering commissioning, monitoring, diagnostic and support.



Free 5 year warranty*

Our Commander S series is built to cope with harsh environments. In fact, it is so reliable we are confident enough to supply it with a free five-year warranty.

*Warranty terms and conditions apply.



COMMANDER S100

Easy to install

The sleek curved design of Commander S optimises component layout for a small footprint and easy access to terminals. The click-on/click-off DIN rail mount makes installation remarkably easy.

CONTROL TECHNIQUES

NEW



Easy to use

Using our new Marshal app (Android/iOS) your drive will be up and running in under 60 seconds



Reliable

Durability is at the core of Commander S' design, guaranteeing performance throughout its whole life cycle.



Cost effective

Equipped with unique features designed to save you time, energy and money



JUST BRING YOUR PHONE NEAR THE NFC LOGO TO CONNECT TO THE INVERTER.



MARSHAL YOUR DRIVE EXPERT IN THE FIELD

Commissioning

- Power off or on commissioning (even in the box)
- FastStart – assisted commissioning. Only 4 key settings to get you up and running
- Advanced features available in parameter setting
- Pre-set application configurations

Cloning

- Parameters can be easily transferred from one drive to another - just tap to write as many drives as you want
- Back-up and restore the configuration via the app

Share

- Share configuration via Outlook, OneDrive, WhatsApp etc.
- Shared configurations are compatible with Marshal & Connect (our PC commissioning tool)
- Export configuration to PDF format

Offline capabilities

- Create new configurations in the app
- Open existing projects to review/change parameters





Diagnostics

- Diagnostics available with power off or on
- Get support with drive alarms within the app
- Error log & active error diagnostics – view active and historical error info
- Differences from default – compare configuration against factory defaults

Registration

- Activate the 5 Year Warranty via the app
- View the drives registered under your account
- Access & download support materials via your CT account

Monitoring and security

- Quick view of parameter settings & drive status
- Restrict access to drive configuration via PIN
- Quick visualisation of I/O, motor, and speed settings

Contact us

Access to worldwide distribution network and local drive centres for buying and technical support

Parameter Setting Summary From Marshal Apps

Commander S100

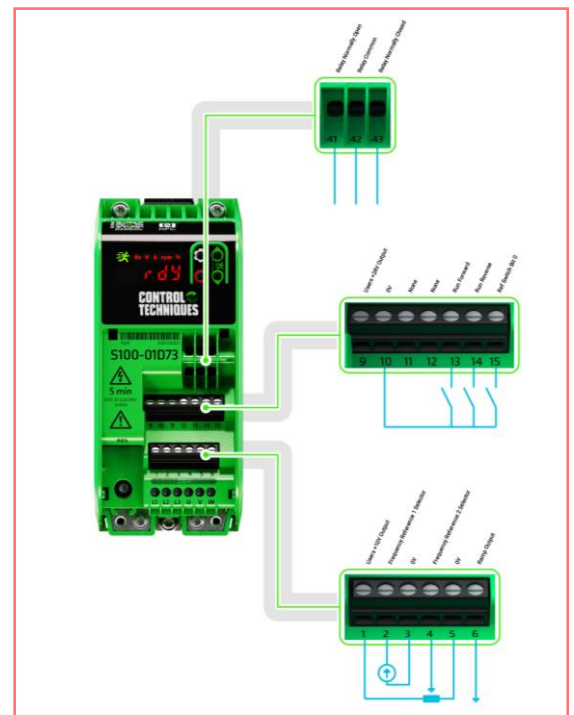
Drive Overview

	Name	S100
	Type	Commander S100
	Model	S100-03D13
	Voltage	200 V
	Frame Size	3
	Rated Current	10.6 A
	Power	2.2 kW
	Serial Number	8998909142
	Firmware	V1.0.10.4
	Running Time	[Hasn't run]
	Powered-up Time	[Not available]
	Fan Running Time	[Hasn't run]

Drive Parameters

#	Caption	Value
P0.01	Minimum Frequency Limit	0.0 Hz
P0.02	Maximum Frequency Limit	50.0 Hz
P0.03	Acceleration Rate 1	5.0 s
P0.04	Deceleration Rate 1	10.0 s
P0.05	Frequency Reference Configuration	Local/Remote (1)
P0.06	Motor Rated Current	10.60 A
P0.07	Motor Rated Speed	1500 rpm
P0.08	Motor Rated Voltage	230 V
P0.09	Motor Rated Power Factor	0.78
P0.10	Run/Stop Configuration	RF+RR 2 Wire (6)
P1.01	Output Frequency	0.0 Hz
P1.02	Output Voltage	0 V
P1.03	Output Power	0.00 kW
P1.04	Motor RPM	0 rpm
P1.05	Drive State	Inhibited (0)
P1.06	Output Current	0.00 A
P1.07	Torque Producing Current	0.00 A

Wiring Guide from Marshal Apps



KEY USABILITY FEATURES

COMMANDER S100 INVERTER

Accessible NFC location for pairing with mobile app MARSHAL

Fixed display with 4 control buttons for quick and easy commissioning and for monitoring drive performance

Drive identification info clearly marked

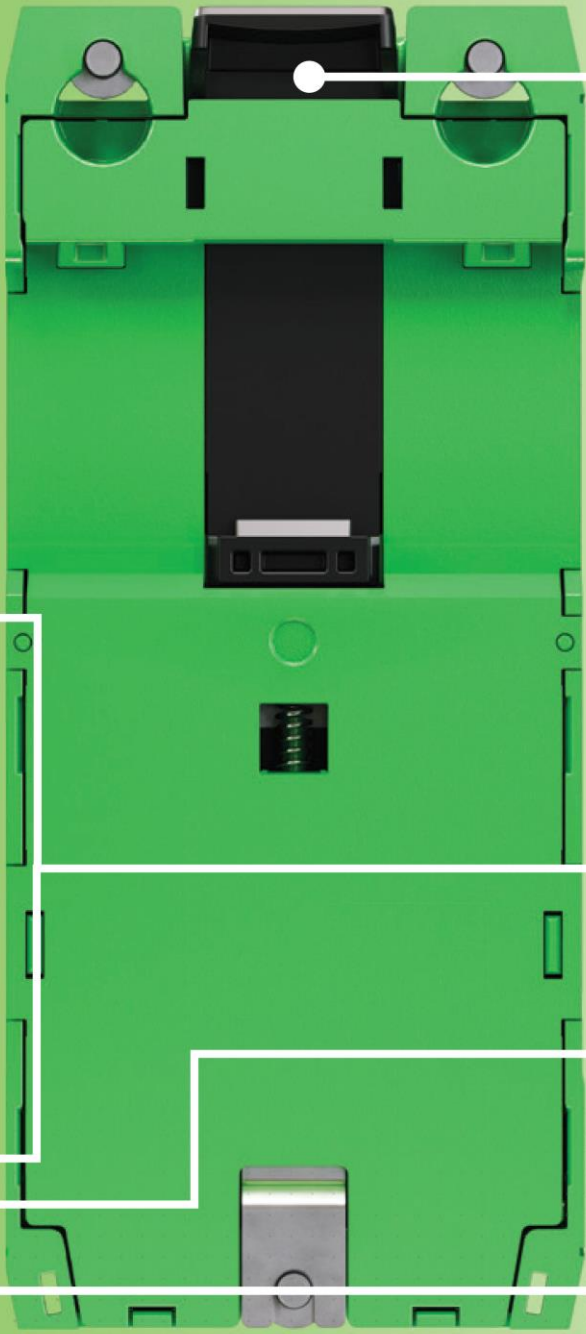
Rating info laser printed on the side of the drive

RJ-45 connector for ModbusRTU communication

Angled and offset screw terminal connectors for easy access

Internal EMC filter for C3 or C1 requirements. C3 filter can be disconnected if necessary.





Click-on/click-off DIN rail mounting

AND / OR

Installation with 3 x bolts with washer.

Drive drops down into position for a secure installation

Finger proof input and output power connections & relay screw terminals

Labelled power terminals

Ground / protective earth connections

COMMANDER S100

Inverter with NFC & Marshal App

**CONTROL
TECHNIQUES**

Nidec
All for dreams



Just bring your phone near the NFC logo to connect to the S100 inverter

DOWNLOAD MARSHAL APP



COMMANDER S100 ACCESSORIES



EXTERNAL KEYPAD
IP65 Enclosure Protection

STANDARDS

Approvals	CE, UKCA, cUL, C-Tick, EAC, KC
Emission Compliance	C3 internal EMC filters C1 & C2 with external EMC filters C1 internal EMC filter, for selected 1Ø200V variants

POWER & CONTROL

Origin	UK (United Kingdom)
Power Range	Commander S100 [0.18kW to 4kW]
Input Voltage (50Hz/60Hz)	1Ø 100V for 0.18kW to 1.1kW 1Ø 240V for 0.18kW to 2.2kW 3Ø 220V for 0.18kW to 2.2kW 3Ø 400V~480V for 0.37kW to 4kW
Duty Rating	Heavy Duty (150% Overload Capability)
Output Frequency	0 to 300Hz Startup Frequency : 0 to 50Hz
Motor Control	Linear V to F, Square V to F, Resistance Compensation
Stopping Modes	Coast, Ramp & DC Injection Braking, DC Braking with Ohz detect, Timed DC Braking, Distance Stop
Braking Unit	Not available for S100 series*
Input Logic	NPN (Sink) and PNP (Source)

COMMUNICATION

Communications	RJ45 for Modbus RTU NFC for MARSHAL app interface
User Software Tools	CONNECT (PC commissioning tool) MARSHAL (Mobile app)

INPUTS & OUTPUTS

Analogue	2 x Analog input (can be used as digital inputs) * (T2 and T4 : 0-10V, 0-20mA or 4-20mA) 1 x Analog output * (T5 : 0-10V, 0-20mA or 4-20mA)
Digital	4 x Digital inputs (T12, T13, T14 and T15) * (T15 can be used as Pulse/Frequency input) 1 x Digital input/output (T11) * (T11 can be used as a Frequency or PWM output to represent analog value). * (T11 as Digital output only work in PNP logic). ** Positive or Negative input logic (PNP or NPN sensors)
Pulse/Frequency	1 x Frequency input (T15 : 0~100kHz) 1 x Frequency output (T11 : 1~10kHz) * (T11 as Frequency output only work in PNP logic)
PWM	1 x PWM output (T11 : 1kHz) * (T11 as PWM output only work in PNP logic)
Relay	1 x Relay (Single pole, double throw relay)

MOUNTING AND ENVIRONMENT

Mounting	Omm side by side mount Click on/click off Din rail mount Screw mount
IP Rating	IP20

COMMANDER S100

Inverter with NFC & Marshal App

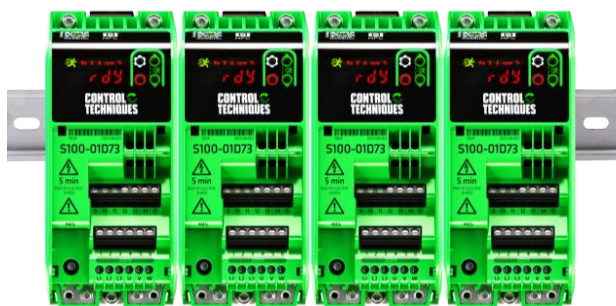
FEATURES & BENEFITS



1 Commissioning even in the box with no power to the inverter.



2 Easy Parameter Cloning - Use Marshal App to tap to write as many inverters as you want



3 0mm side-by-side mounting - Space saving in Panel Box



4 NFC technology enables easy-commissioning and retrieval of parameter even when the S100 is in power-off mode (or malfunction condition)

CONTROL TECHNIQUES

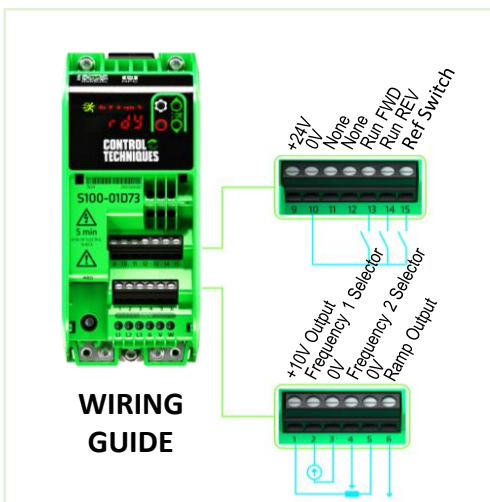
Commander S100

Drive Overview

Name	S100
Type	Commander S100
Model	S100-03D13
Voltage	200V
Frame Size	3
Rated Current	10.6A
Power	2.2kW
Serial Number	12345678
Firmware	V1.0.10.4

Drive Parameters

#	Caption	Value
P0.01	Min Frequency Limit	0.0Hz
P0.02	Max Frequency Limit	60.0Hz
P0.03	Acceleration Rate 1	2.0s
P0.04	Deceleration Rate 1	2.0s
P0.05	Frequency Ref Config	Preset (4)



7 2-year product warranty

5-year Manufacturer warranty Subject to terms and conditions. Customer must register your drive on Control Techniques [website](#) or via the Marshal app within 6months of the date of purchase.

5 Use Marshal App to generate report (PDF format) on inverter data, model and serial number, firmware version, parameter's original value and changed value, list of alarm record, running time and wiring diagram.



6 Save database and sharing of inverter configurations (PARFILE format) via communication apps, email & messenger.



COMMANDER S ORDERING GUIDE

How to select a drive

Electrical Considerations

- What is the supply voltage?
- Single or three phase input power?
- What is the motor rating?
- Continuous current – FLA (Full Load Amps)
- Select the drive based on motor Amps rather than power rating

Frame 01



Frame 02



Frame 03

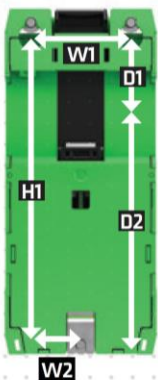


Dimensions



Model Number	Overall Dimensions							
	Height		Depth		Width		Weight	
	mm	in	mm	in	mm	in	kg	lb
S100-01	156	6.14	68	2.70	130	5.12	0.7	1.54
S100-02	192	7.56	68	2.70	132	5.20	0.8	1.76
S100-03	192	7.56	90	3.54	132	5.20	1.0	2.2

Commander S100 Mounting Dimensions



Model Number	H1		W1		W2		D1		D2		Mounting Hole Diameter	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
S100-01	145	5.71	45	1.77	22	0.89	40	1.56	105	3.66	4.8	0.19
S100-02	180	7.11	45	1.77	22	0.89	40	1.56	140	5.55	4.8	0.19
S100-03	180	7.11	65	2.56	37	1.48	40	1.56	140	5.55	4.8	0.19



DOWNLOAD
DOCUMENT



**CONTROL
TECHNIQUES**



Nidec
All for dreams

NE300 & NE200

HIGH PERFORMANCE VECTOR CONTROL DRIVE

0.4KW to 900KW 220V/400VAC 0HZ to 550HZ



NE300 EXPANSION CARD OPTIONS*

NE200 Series Key Technical Specifications

Power Range	0.4kW to 4kW (0.5hp to 5hp)
Input Voltage	1Ø 220V (50Hz/60Hz) for 0.4kW to 2.2kW 3Ø 415V (50Hz/60Hz) for 0.75kW to 4kW
Duty Rating	Heavy Duty
Output Frequency	0 to 550Hz
Startup Frequency	0 to 60Hz
Overload Capacity	Type G : 150% rated current 1min, 180% rated current 20s (Heavy Duty) Type P : 120% rated current 1min, 150% rated current 1s (Normal Duty)

Motor Control

Vector Control without PG (SVC)	Starting Torque : 0.5Hz 150% Speed Adjust Range : 1:100 Speed Stabilization Precision : $\pm 0.2\%$ Torque Control : Yes Torque Precision : $\pm 10\%$ Torque Response Time : <20ms
V/F Control	Starting Torque : 1.5Hz 150% Speed Adjust Range : 1:150 Speed Stabilization Precision : $\pm 0.5\%$ Torque Control : Yes Torque Precision : (N/A) Torque Response Time : (N/A)
Stopping Mode	Dynamic braking, DC injection braking, Magnetic flux braking

Communication

Communication	RJ45 for Modbus RTU (Default)
---------------	-------------------------------

Inputs & Outputs (NPN Logic)

Analogue	2 x Analogue inputs (AI1 : 0~10V) (AI2 : 0~10V or 0~20mA) 1 x Analogue output (AO : 0~10V or 0~20mA)
Digital	5 x Digital inputs (X1~X5) 2 x Digital inputs (AI1 and AI2) 1 x Digital output (Y1)
Pulse (Frequency)	1 x Pulse Input (X4 or X5 : 0~200Hz) 1 x Pulse Output (Y1 : 0~50kHz or 0~500Hz)
Relay	1x Relay (Single pole, double throw relay)

Key Functions

Key Function	Torque/speed control mode switching, Multi-function input/output terminals, Under voltage regulation, Torque limit, AC operation grounding switching, Multi step operation, Slip compensation, PID regulation, Simple PLC, Manual/automatic torque boost, Current control, Current limit, AVR function.
--------------	---

Options

Communication Card	N/A
Keypad Holder	Keypad Holder

NE200 & NE300 Series Standards

Approvals	CE, EU Directive, EAC
-----------	-----------------------

Mounting & Environment

IP Rating	IP20
Mounting	Click on/click off Din rail mount / Screw mount
Ambient Temperature	Operation : -10°C to 40°C (14°F to 104°F) Storage : -40°C to 60°C (-40°F to 140°F)

NE300 Series Key Technical Specifications

Power Range	1.5kW to 900kW (2hp to 1200hp)
Input Voltage	3Ø 415V (50Hz/60Hz) for 1.5kW to 900kW
Duty Rating	Heavy Duty
Output Frequency	0 to 550Hz
Startup Frequency	0 to 60Hz
Overload Capacity	Type G : 150% rated current 1min, 180% rated current 20s (Heavy Duty) Type P : 120% rated current 1min, 150% rated current 1s (Normal Duty)

Motor Control

Vector Control with PG (VC)	Starting Torque : 0.00Hz 180% Speed Adjust Range : 1:1000 Speed Stabilization Precision : $\pm 0.02\%$ Torque Control : Yes Torque Precision : $\pm 5\%$ Torque Response Time : <10ms
Vector Control without PG (SVC)	Starting Torque : 0.5Hz 150% Speed Adjust Range : 1:100 Speed Stabilization Precision : $\pm 0.2\%$ Torque Control : Yes Torque Precision : $\pm 10\%$ Torque Response Time : <20ms
V/F Control	Starting Torque : 1.5Hz 150% Speed Adjust Range : 1:150 Speed Stabilization Precision : $\pm 0.5\%$ Torque Control : Yes Torque Precision : (N/A) Torque Response Time : (N/A)
Stopping Mode	Dynamic braking, DC injection braking, Magnetic flux braking

Communication

Communication	RJ45 for Modbus RTU (Default)
---------------	-------------------------------

Inputs & Outputs (Input logic NPN)

Analogue	2 x Analogue inputs : (AI1 : 0~10V) (AI2 : 0~10V or 0~20mA) 1 x Analogue output (AO1 : 0~10V, 0~20mA or 4~20mA)
Digital	5 x Digital inputs (X1~X5) 1 x Digital input (AI1) 2 x Digital outputs (Y1 and D0)
Pulse (Frequency)	1 x Pulse Input (X4 or X5 : 0~50kHz) 1 x Pulse Output (D0 : 0~50kHz or 0~500Hz)
Relay	1 x Relay (Single pole, double throw relay)

Key Functions

Key Function	Torque/speed control mode switching, Multi-function input/output terminals, Under voltage regulation, Torque limit, AC operation grounding switching, Multi step operation, Slip compensation, PID regulation, Simple PLC, Manual/automatic torque boost, Current control, Current limit, AVR function, Autotune, S curve Acc/Dec, Fix length control.
--------------	---

Options

Communication Card	NE300 Expansion Card : I/O extension card, +/- 10V extension card, Injection molding machine extension card, Speed tracking extension card, Modbus TCP, ProfiNet, ProfiBus DP, CC-Link, EtherCAT and EtherNet/IP.
Keypad Holder	Keypad Holder

NE200 series drive technical specifications:

Input	Rated power/ frequency	NE200-2Sxxxx: 1-phase 200V - 240V; 50Hz/60Hz		
		NE200-4Txxxx: 3-phase 380V - 440V; 50Hz/60Hz		
Voltage range		NE200-2Sxxxx: 176V - 264V; Voltage unbalance degree: $\leq 3\%$; permissible frequency fluctuation: $\pm 5\%$		
		NE200-4Txxxx: 304V - 456V; Voltage unbalance degree: $\leq 3\%$; permissible frequency fluctuation: $\pm 5\%$		
Output	Voltage range	NE200-2Sxxxx: 0-200V/440V; NE200-4Txxxx: 0-380V/440V		
	Overload capacity	Type G: 150% rated current 1min, 180% rated current 20s Type P: 120% rated current 1min, 150% rated current 1s		
Control features	Control mode	Vector control with PG(VC)	Vector control without PG(SVC)	V/F control
	Startup torque	----	0.5Hz 150%	1.5Hz 150%
	Speed adjustable range	----	1:100	1:50
	Speed stabilization precision	----	$\pm 0.2\%$	$\pm 0.5\%$
	Torque control	----	Yes	N/A
	Torque precision	----	$\pm 10\%$	----
	Torque response time	----	<20ms	----
Product functions	Key functions	Torque/speed control mode switching, Multi-function input/ output terminals, under voltage regulation, AC operation grounding switching, torque limit, multi step operation, slip compensation, PID regulation, simple PLC, current control, manual/ automatic torque boost, current limit, AVR function		
	Frequency setup	Keypad, terminal Up/Down, Communication, Analog input AI1/AI2		
	Output frequency	0.00-550.0Hz		
	Startup frequency	0.00-60.00Hz		
	Acc/Dec time	0.01-3600.0s		
	Dynamic braking	400V drive: braking unit action voltage: 650 - 750V;		
		200V drive: braking unit action voltage: 360 - 390V;		
	DC injection braking	DC braking activation frequency: 0.00 - 550.0Hz		
DC braking current: G type 0.0 - 100.0%; P type 0.0 - 80.0%				
	DC braking time: 0.0 - 30.0s; Quick DC brake activation without lag time			
Magnetic flux braking	Fast deceleration through adding motor magnetic flux			
Unique functions	Parameter cloning	Parameter upload, download. User can forbid the overwriting of the uploaded parameters.		
Protection function	Power undervoltage/overvoltage protection, overcurrent protection, IGBT protection, heatsink overheat protection, drive overload protection, motor overload protection, External devices faults protection, output phase-to-phase short-circuit protection, Abnormal power failure in running, power supply trip, output phase loss, EEPROM trip, Analog input trip, communication trip, version compatibility trip, cloning trip, hardware overload protection			
Environment	Application environment	Vertical installation in well ventilated cabinet. Horizontal or other installation are forbidden. The cooling medium is air. Free from direct sunlight, dust, corrosive gas, combustible gas, oil mist, steam, and water drop.		
	Ambient temperature	-10-+40°C, deration is required from 40 to 50°C, rated output current decreasing 1% per 1°C temperature higher		
	Humidity	5-95% without condensation		
	Altitude	0-2000m, deration is required for more than 1000 meters, at rated output current decreasing 1% per 100m higher		
	Vibration	3.5mm, 2-9Hz; 10 m/s ² , 9-200Hz; 15 m/s ² , 200-500Hz		
	Storage temperature	-40-+70°C		
Structure	Protection level	IP20		
	Cooling	Fan air cooling		

NE300 series drive technical specifications:

Input	Rated power/frequency	3-phase 380V - 440V; 50Hz/60Hz		
	Voltage range	304V - 456V; Voltage unbalance degree: $\leq 3\%$; Permissible frequency fluctuation: $\pm 5\%$		
Output	Voltage range	0-380V/440V		
	Overload capacity	Type G: 150% rated current 1min, 180% rated current 20s Type P: 120% rated current for 1min, 150% rated current for 1s		
Control features	Control mode	Vector control with PG(VC)	Vector control without PG(SVC)	V/F control
	Startup torque	0.00Hz 180%	0.5Hz 150%	1.5Hz 150%
	Speed adjust range	1:1000	1:100	1:50
	Speed stabilization precision	$\pm 0.02\%$	$\pm 0.2\%$	$\pm 0.5\%$
	Torque control	Yes	Yes	N/A
	Torque precision	$\pm 5\%$	$\pm 10\%$	----
	Torque response time	<10ms	<20ms	----
Product functions	Key functions	Torque/speed control switching, Multi-function input/ output terminals, under voltage regulation, AC operation grounding switching, flying start, torque limit, multi speed operation, autotune, S curve Acc/Dec, slip compensation, PID regulation, simple PLC, fix length control, droop control, current control, manual/ automatic torque increase, current limit, AVR function		
	Frequency setup	Keypad, terminal Up/Down, communication, Analog input AI1/AI2, Terminal pulse input X4,X5		
	Output frequency	0.00-550.0Hz		
	Startup frequency	0.00-60.00Hz		
	Acc/Dec time	0.1-3600s		
	Dynamic braking	400V drive: braking unit voltage: 650 - 750V; 200V drive: braking unit voltage: 360 - 390V;		
	DC injection braking	DC braking activation: 0.00 - 550.0Hz DC braking current: G type 0.0 - 100.0%; P type 0.0 - 80.0% DC braking time: 0.0 - 30.0s; Quick DC brake activation without lag time		
	Magnetic flux braking	Fast deceleration through adding motor magnetic flux		
Unique functions	Parameter cloning	Parameter upload, download. User can forbid the overwriting of the uploaded parameters.		
	Keypad	LED keypad as standard.		
	Common DC bus	Common DC bus for multiple drives power supply		
	Independent air duct	Independent air duct design for whole series product		
	Extension card	IO extension card, injection molding machine connecting card etc.		
Power-up detection	Automatic detection of internal and external circuits when power-up			
Protection function	Power undervoltage/overvoltage protection, overcurrent protection, autotune trip, IGBT protection, heatsink overheat protection, drive overload protection, motor overload protection, external device false protection, output to ground short-circuit protection, abnormal power failure in running, power supply abnormal, output phase loss, EEPROM trip, relay contact error, temperature sampling abnormal, encoder off-line, analog input trip, communication trip, version compatibility trip, cloning trip, extension card connection trip, hardware overload protection			
Efficiency	Operation at rated power: 7.5kW or below $\geq 93\%$; 11kW-45kW $\geq 95\%$; 55kW or above $\geq 98\%$			
Environment	Application environment	Vertical installation in well ventilated cabinet. Horizontal or other installation are forbidden. The cooling medium is air. Free from direct sunlight, dust, corrosive gas, combustible gas, oil mist, steam, and water drop.		
	Ambient temperature	-10°C-+40°C, deration is required from 40 to 50°C, rated output current decreasing 1% per 1 °C temperature higher		
	Humidity	5-95% without condensation		
	Altitude	0-2000m, deration is required for more than 1000 meters, at rated output current decreasing 1% per 100m higher		
	Vibration	3.5mm, 2-9Hz; 10 m/s ² , 9-200Hz; 15 m/s ² , 200-500Hz		
Storage temperature	-40-+70°C			
Structure	Protection level	IP20		
	Cooling	Fan force cooling		

NE300 Options

Optional card	Order code	Terminal	Description	Drive model	
I/O extension card	NE30-I/O Lite	X6	Multi-function input 6 (to PLC)	NE300 whole series	
		X7	Multi-function input 7 (to PLC)		
		X8	Multi-function input 8 (to PLC)		
		Y2	Multi-function output Y2 (to COM)		
		BRA/BRB/BRC	Relay output 2		
		PLC	PLC common end (to PLC)		
		AO2	Analog output 2 (0 - 10V, 0/4 - 20mA selectable)		
		GND	Analog output common end		
	NE30-I/O Relay	BRA/BRB/BRC	Relay output 2	NE300 whole series	
		AO2	Analog output 2 (0 - 10V, 0/4 - 20mA selectable)		
		GND	Analog output common		
	Injection molding machine extension card	NE30-ZS01	+A1	0-1A current input	NE300-4T0110G/0150PB - NE300-4T9000G-F
			-A1	0-1A current output	
			+A2	0-1A/2A current input	
-A2			0-1A/2A current output		
X6			Multi-function input 6 (to COM)		
COM			Multi-function input common		
+/- 10V extension card	NE30-AN01	485+	485 differential signal positive	NE300 whole series	
		485-	485 differential signal negative		
		-10V	Provide -10V to external (to GND)		
		AI3	+/- 10V analog input (to GND)		
		GND	Analog output common		
Speed tracking extension card	NE30-SP01	U	Connect to drive U-phase output	NE300-4T0015G/0022PB - NE300-4T0150G/0185PB	
		W	Connect to drive W-phase output		

STANDARD OR CUSTOMIZE, WE HAVE BOTH!

We serve realistic and even customised products and solutions to meet specific demand of your business including competitive product, technical support, effective after sales services & global product sourcing. These are our commitments toward your business, don't you like it!



MAJOR INDUSTRIAL SUPPLIES & ENGINEERING SERVICES



AC SERVO MOTOR & DRIVE
Mitsubishi ▪ Panasonic ▪ Omron



TOUCH SCREEN AND HMI
Omron ▪ Mitsubishi



PLC & PROGRAMMING
Siemens ▪ Mitsubishi ▪ Siemens



INVERTER (VFD)
Panasonic ▪ Mitsubishi ▪ Siemens



STEPPER MOTOR & DRIVE
Oriental Motor



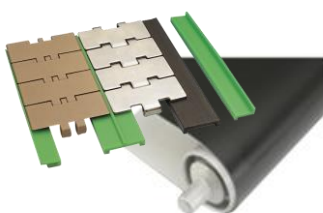
SPEED CONTROL GEAR MOTOR
Oriental Motor ▪ Panasonic ▪ LDS



BEVEL & HYPOID GEARMOTOR
Sumitomo ▪ Nissei ▪ LDS



CLUTCH & BRAKE UNIT
Miki Pulley ▪ Yan Co



**PVC PU PE CONVEYOR BELT
TEFLON & ROUGH TOP BELT
PLASTIC & STAINLESS STEEL
CHAIN**



**ALUMINIUM PROFILE
GUSSET HINGES AND
ACCESSORIES**



**SENSOR ▪ RELAY ▪ TIMER
ROTARY ENCODER ▪
COUPLING ▪ COUNTER**



MIDDLEWARE INTERFACE
For new communication software
between your database/server
and machinery/equipment.