

Enquiry N°:

Created by/Checked by: WT/HO

SERVO MOTOR 142LDA200

2000KG PAYLOAD AGV SOLUTION



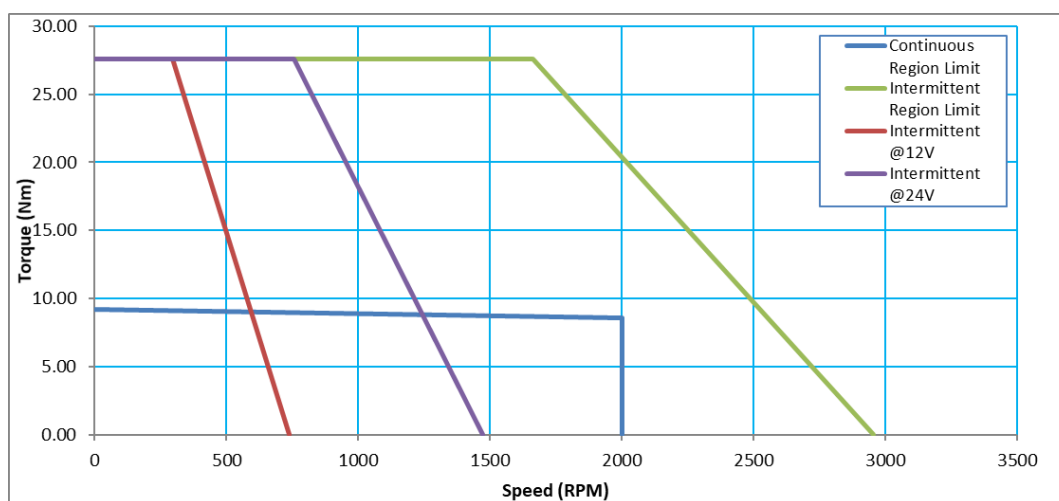
Definition

Type	Unimotor HD	
Frame Size (mm)	142	
Voltage	L	40-50 Vdc
Magnet type	D	High Dynamic
Frame Length	A	
Speed (min ⁻¹)	20	2000
Brake	0	Unbraked
Connection type	F	Power and Signal flying leads (0.5 m)
Output shaft	G	Gearbox output
Feedback device code	CJ	Renco R35i encoder 4096 5PP push-pull comms
Inertia & thermistor	H	High Inertia + no thermistor
PCD (Gearbox)	165	165 (FF 165/90)
Shaft Diameter (Gearbox)	900	90 mm register diameter
Insulation class	F	
UL Motor / UL Stator	UL Stator	

Nominal characteristics

Motor Ambient Temperature (°C)	40	Drive Fsw (kHz)	12
Motor Peak Torque (Nm)	27.6	Stall Current (A)	44.0
Motor Stall Torque (Nm)	9.2	Rated Current (A)	41.1
Rated Torque (Nm)	8.6	Kt (Nm/A)	0.209
Rated Power (kW)	1.8	Ke (V/kmin ⁻¹)	12.8
Winding Thermal Time Constant (s)	235	R (ph-ph) (Ohm)	0.02
Number of Poles	10	L (ph-ph) (mH)	0.22
Typical Cogging (Nm)	0.05		
Inertia (kg.cm ²) (Motor + Gearbox)	≈ 86	Weight (kg) (Motor + Gearbox)	≈ 13
Ingress Protection Level (IP)	IP54		

Torque / speed graph

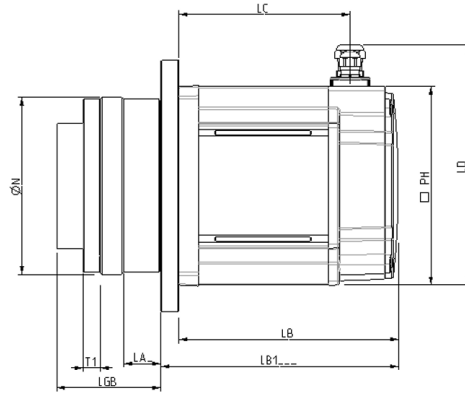
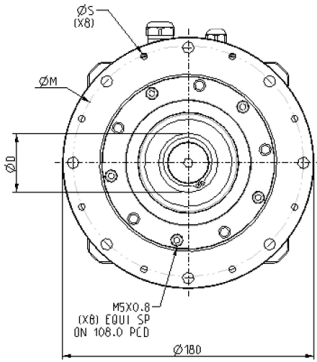


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SERVO MOTOR 142LDA200

Motors (° & mm)



LB	Total length (Motor)	174.6
LB1	length with Gearbox flange	tbc
LC	Power connector position	139.7
LGB	Gearbox Length	87.5
LA	Flange to Flange (Gearbox)	25.5
T1	Register Length (Gearbox)	14.0
N	Register Diameter (Gearbox)	127.0
LD	Power connector overall height	179.5
LD1	Signal connector overall height	166.6
S	Fixing Hole Diameter (Gearbox)	M5
M	Fixing hole PCD (Gearbox)	165
PH	Motor Housing Width	142
LB	Mounting Bolt (Gearbox)	M5
	Total Motor Length Inc. Gearbox	262.1

Motor electrical interface 0.5m flying leads option:

Feedback device code:						Connection type:		
CJ – Renco R35i encoder 4096 5PP push-pull comms						F – Power and Signal flying leads (0.5 m)		
1	Red	+ V	7	Yellow	CH A	1	U	Orange (x 2)
2	Green	HALL A	8	-	-	2	V	Red (x 2)
3	Brown	HALL B	9	Blue	CH B	3	W	Yellow (x 2)
4	White	HALL C	10	-	-	4	Earth	Green/Yellow (x 2)
5	Black	0 V	11	-	-			
6	-	-	12	-	-			

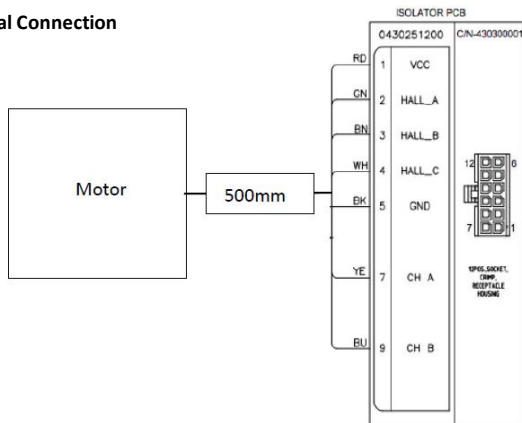
Power connection: 0.5 m flying lead, M20 gland

8 cores of 12 AWG UL 1330 wire, with polyolefin heat-shrink sleeve; M6 Ring terminals fitted to lead wires

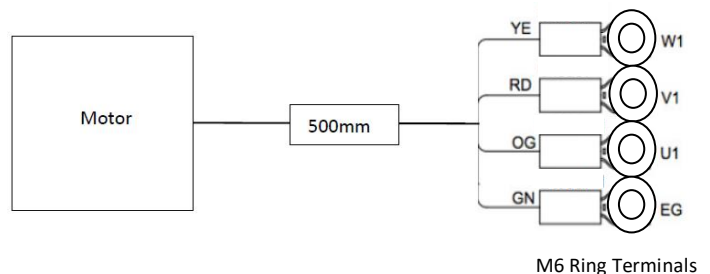
Signal connection: 0.5 m flying lead, M16 gland

7 cores of 28 AWG PVC wire, insulated in UL AWM 2725 PVC jacket, screened; 12-Way Molex connector 43025-1200 (see opposite for pin detail)

Signal Connection



Power Connection



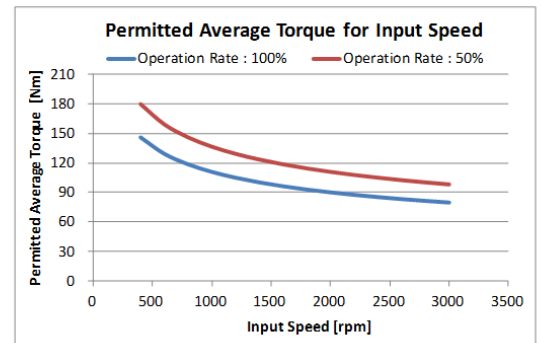
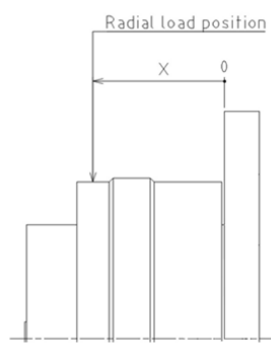
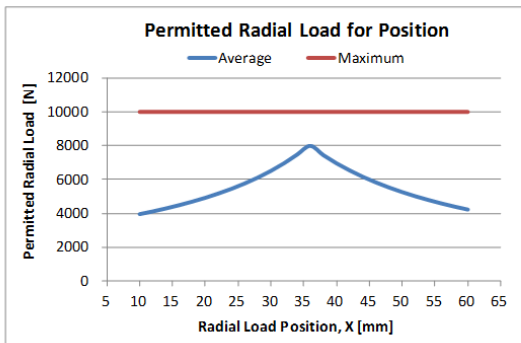
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SERVO MOTOR 142LDA200

Gearbox characteristics

Manufacturer	Shimpo	Backlash (arc/min)	≤ 8
Type	Inline Planetary	Radial Load (Fr, N) @ Fa=0, Input Speed Nom	6900
Part No.	VRLZ-120-9-340	Radial Load MAX (Fr, N)	10000
Ratio	9	Axial Load (Fa, N) @ Fr=0, Input Speed Nom	3800
Stages	1	Output Torque Nominal (Nm)	90
Inertia (kg.cm ²)	≈ 72	Output Torque Max (Nm)	225
Weight (kg)	6.6	Input Speed Nom (rpm)	2000
Efficiency	95%	Input Speed Max (rpm)	3000



Enquiry N°:

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SMA414 - SERVO MOTOR 142LDA20X

2000KG PAYLOAD AGV SOLUTION



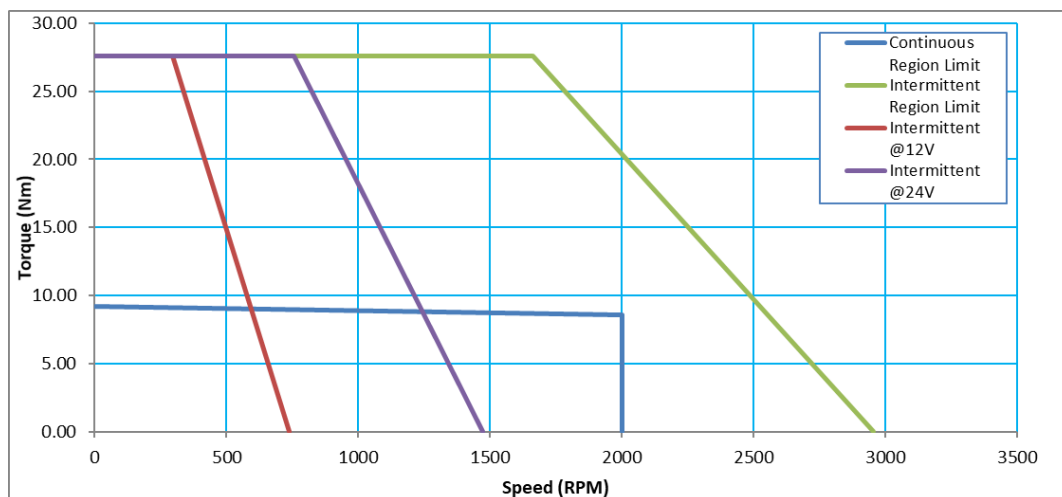
Definition

Type	Unimotor HD	
Frame Size (mm)	142	
Voltage	L	40-50 Vdc
Magnet type	D	High Dynamic
Frame Length	A	
Speed (min ⁻¹)	20	2000
Brake	X	Braked
Connection type	F	Power and Signal flying leads (0.5 m)
Output shaft	G	Gearbox output
Feedback device code	CJ	Renco R35i encoder 4096 5PP push-pull comms
Inertia & thermistor	G	Standard Inertia + no thermistor
PCD (Gearbox)	165	165 (FF 165/90)
Shaft Diameter (Gearbox)	900	90 mm register diameter
Insulation class	F	
UL Motor / UL Stator	UL Stator	

Nominal characteristics

Motor Ambient Temperature (°C)	40	Drive Fsw (kHz)	12
Motor Peak Torque (Nm)	27.6	Stall Current (A)	44.0
Motor Stall Torque (Nm)	9.2	Rated Current (A)	41.1
Rated Torque (Nm)	8.6	Kt (Nm/A)	0.209
Rated Power (kW)	1.8	Ke (V/kmin ⁻¹)	12.8
Winding Thermal Time Constant (s)	235	R (ph-ph) (Ohm)	0.02
Number of Poles	10	L (ph-ph) (mH)	0.22
Typical Cogging (Nm)	0.05		
Inertia (kg.cm ²) (Motor + Gearbox)	≈ 86	Weight (kg) (Motor + Gearbox)	≈ 15
Ingress Protection Level (IP)	IP54		
Brake	Type 6	Static Torque (Nm)	16.0
Release Time (ms)	105	Backlash (°)	0.38
Brake Supply Voltage (V)	24	Brake Coil Power (W)	17.5

Torque / speed graph

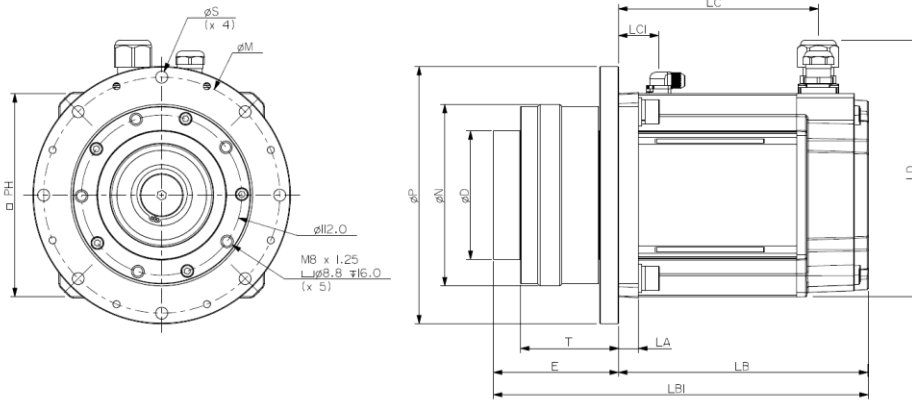


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SMA414 - SERVO MOTOR 142LDA20X

Motors (° & mm)



LB	Motor length	174.6
LB1	Total length	262.1
E	Gearbox length	87.5
LC	Gland position	139.7
LC1	Brake gland position	28.0
LA	Flange thickness (Motor)	14.0
T	Flange to Flange (Gearbox)	68.5
N	Clearance Diameter (Gearbox)	127h7
D	Register Diameter (Gearbox)	90.0
LD	Overall height	179.5
P	Flange Diameter (Gearbox)	180.0
S	Fixing Hole Diameter	8.3
M	Fixing hole PCD	165.0
PH	Motor Housing Width	142.0
Mounting Bolt		M8

Motor electrical interface 0.5m flying leads option:

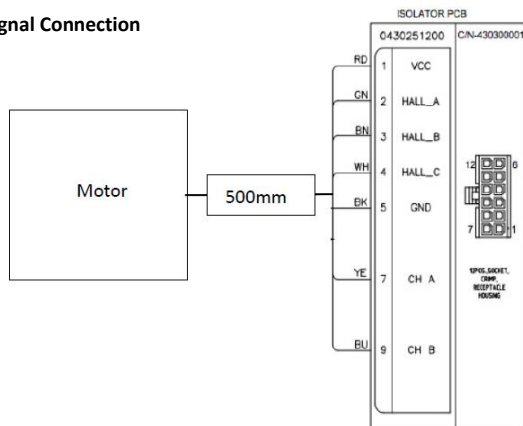
Feedback device code: CJ – Renco R35i encoder 4096 5PP push-pull comms						Connection type: F – Power and Signal flying leads (0.5 m)		
1	Red	+ V	7	Yellow	CH A	1	U	Orange (x 2)
2	Green	HALL A	8	-	-	2	V	Red (x 2)
3	Brown	HALL B	9	Blue	CH B	3	W	Yellow (x 2)
4	White	HALL C	10	-	-	4	Earth	Green/Yellow (x 2)
5	Black	0 V	11	-	-			
6	-	-	12	-	-			

Power connection: 0.5 m flying lead, PG21 gland
8 cores of 12 AWG UL 1330 wire, with polyolefin heat-shrink sleeve; M6 Ring terminals fitted to lead wires

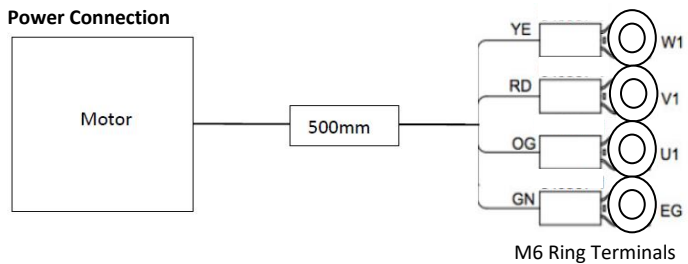
Signal connection: 0.5 m flying lead, M16 gland
7 cores of 28 AWG PVC wire, insulated in UL AWM 2725 PVC jacket, screened; 12-Way Molex connector 43025-1200 (see opposite for pin detail)

Brake connection: 0.5 m flying lead
2 cores of 18 AWG PVC wire, insulated; 2-Way Molex connector 39-01-3029

Signal Connection

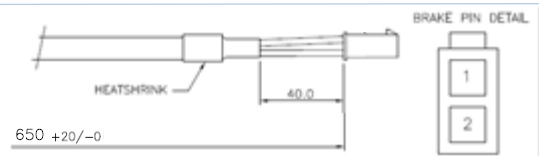


Power Connection



Brake Connection

2W END	A	FUNCTION	COLOUR
1		+VE	WHITE
2		-VE	BLACK



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Type	Inline Planetary	Radial Load (Fr, N) @ Fa=0, Input Speed Nom	6900
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Ratio	9	Axial Load (Fa, N) @ Fr=0, Input Speed Nom	3800
Stages	1	Output Torque Nominal (Nm)	90
Inertia (kg.cm ²)	≈ 72	Output Torque Max (Nm)	225
Weight (kg)	6.6	Input Speed Nom (rpm)	2000
Efficiency	95%	Input Speed Max (rpm)	3000

