



**Ezi-SERVO II EtherCAT 4X** is stepping motor control system using EtherCAT, high speed ethernet (100Mbps Full-Duplex) based fieldbus. Ezi-SERVO II EtherCAT 4X is EtherCAT slave module which support CAN application layer over EtherCAT (CoE). CiA 402 Drive Profile implemented. Supported modes are Profile Position Mode, Homing Mode, Cyclic Synchronous Position Mode.

**Their main characteristics are :**

- CiA 402 Drive Profile Support
- Closed Loop System
- No Gain Tuning / No Hunting
- Compact 4 Axes Stepping Motor Drive
- Save Space / Reduce Wiring (Reduce



## Technical Data

Motor Model	Driver Model	Number of phases	Voltage	Current	Resistance	Inductance	Holding Torque	Rotor Inertia	Weights	Length (L)	Permissible Overhung Load (Distance from end of shaft)			
											3mm	8mm	13mm	18mm
Units		-	VDC	A	Ohm	mH	Nm	g.cm <sup>2</sup>	g	mm	N			
EzM2-20	20M	2	2,75	0,5	5,5	2,0	0,016	2,5	80	28	18	30	-	-
	20L	2	3,0	0,5	6,0	2,6	0,025	3,3	104	38	18	30	-	-
EzM2-28	28S	2	3,0	0,95	3,2	2,0	0,069	9,0	147	32	30	38	53	-
	28M	2	3,0	0,95	3,2	2,7	0,098	13	204	45	30	38	53	-
	28L	2	3,0	0,95	3,2	3,2	0,118	18	232	50	30	38	53	-
EzM2-35	35M	2	1,8	1,5	1,2	1,2	0,13	15	194	32	22	26	33	46
	35L	2	2,7	1,5	1,8	2,6	0,23	20	226	36	22	26	33	46
EzM2-42	42S	2	3,36	1,2	2,8	5,4	0,32	35	294	34	22	26	33	46
	42M	2	4,32	1,2	3,6	7,2	0,44	54	357	40	22	26	33	46
	42L	2	4,56	1,2	3,8	8,0	0,5	77	426	48	22	26	33	46
EzM2-56	42XL	2	7,2	1,2	6,0	15,6	0,65	114	564	60	22	26	33	46
	56S	2	1,56	3,0	0,52	1,2	0,64	180	608	46	52	65	85	123
	56M	2	1,62	3,0	0,54	2,0	1,0	280	784	55	52	65	85	123
EzM2-60	56L	2	2,64	3,0	0,88	4,0	1,5	520	1230	80	52	65	85	123
	60S	2	1,32	4,0	0,33	0,75	0,88	240	693	47	70	87	114	165
	60M	2	1,48	4,0	0,37	1,1	1,28	490	856	56	70	87	11	165
	60L	2	2,2	4,0	0,55	2,7	2,4	690	1419	85	70	87	114	165

# SPECIFICATIONS

## SPECIFICATIONS OF MOTOR

Drive Method	BI-POLAR
Permissible Thrust Load (N)	Lower than motor weight
Insulation Resistance (Mohm)	100 MIN.(at 500 VDC)
Insulation Class	CLASS B(130°C)
Operating Temperature (°C)	0 to 55

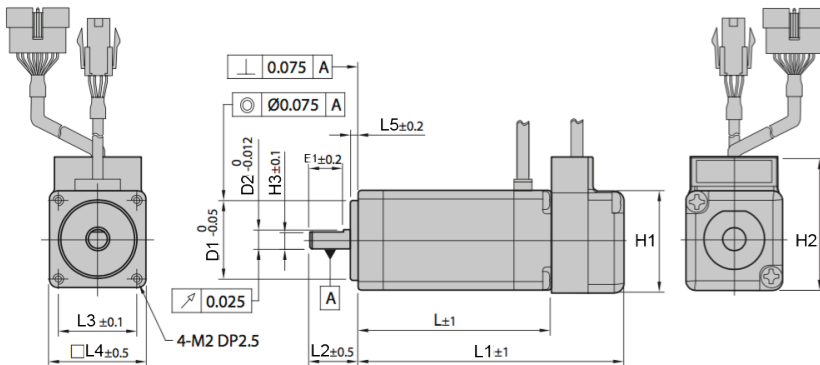
## SPECIFICATIONS OF DRIVE

Input Voltage	24 VDC ±10%	
Control Method	Closed loop control with 32bit MCU	
Curent Consumption	Max 500mA (Except motor current)	
Operating Condition	Ambient Temperature	In use : 0 - 50°C / In storage : -20 - 70°C
	Humidity	In use : 35 - 85% RH (Non-Condensing) / In storage : 10 -90% RH (Non-Consending)
	Vib.Resist	0,5g
Function	Rotation Speed	0 - 3,000 [rpm] *1
	Resolution (ppr)	Encoder F : 4,000(ppr) : 500 1,000 1,600 2,000 3,600 4,000 5,000 6,400 7,200 10,000 Encoder A : 10,000(ppr) : 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 Encoder D : 16,000(ppr) : 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 16,000 Encoder B : 20,000(ppr) : 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 20,000 (Selectable by parameter) *2
	Protection Functions	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, Encoder Connect Error, In-Position Error, ROM Error, Position Overflow Error
	LED Display	Power status, In-Position status, Servo On status, Alarm status
EtherCAT	Supported Protocol	CoE (CiA 402 Drive Profile), FoE (Firmware Download)
	Supported Mode	Profile Position Mode, Homing Mode, Cyclic Synchronous Position Mode
	Synchronization	Free Run, SM Event, DC SYNC Event
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN)
	Output Signals	Brake

\*1 : Up to the resolution of 10,000[ppr], maximum speed can be reached by 3,000[rpm] and with the resolution more than 10,000[ppr], maximum speed shall be reduced accordingly.

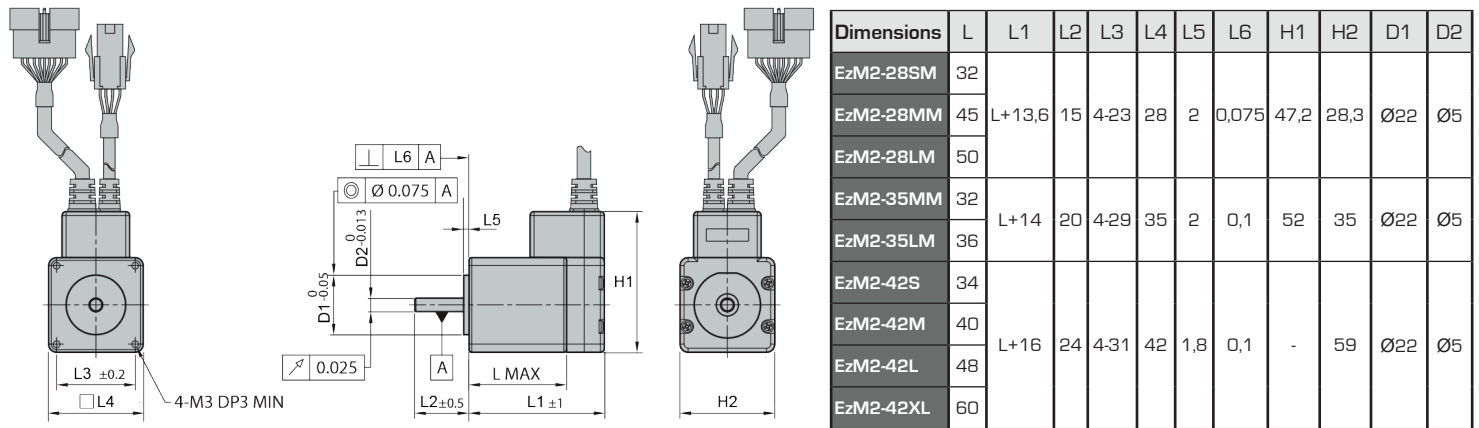
\*2 : When selected resolution is more than encoder resolution, motor shall be operated by microstep between pulses.

## DRAWING

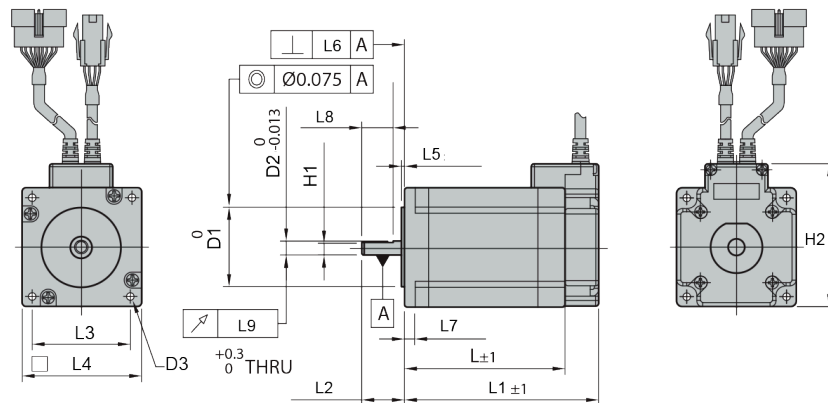


Dimensions	L	L1	L2	L3	L4	L5	H1	H2	D1	D2	E1
EzM2-20M	28	L+15	10	4-16	20	1,5	20,6	27,6	Ø16	Ø4	7
EzM2-20L	38										
EzM2-28S	32	L+13,6	15	4-23	28	2	-	31	Ø22	Ø5	10
EzM2-28M	45										
EzM2-28L	50										

# DRAWING



When ordering 28mm or 35mm Stopper type of motor, please add "M" after standard motor model number.



# PART NUMBER COMPOSITION

**Ezi-SERVO II EC-4X-X-XXXX**

1
2
3
4

① Drive Series Type  
EC : EtherCAT

② Number of motor axis  
4X : 4 axes  
3X : 3 axes  
2X : 2 axes

③ User Code

④ Please mention the specification of motors and options in purchase order

In accordance with our policy of continual product improvement, A2V reserves the right to amend the specification of these products without prior notification