

High-torque motion –
in a compact design

Compact CMDV servomotors



Dynamics, strength and precision in a compact design

Compact drives are very much in demand these days due to the fact that machine manufacturers are increasingly looking for maximum dynamics and precision in a very compact design. This is why SEW-EURODRIVE offers the extremely short and compact CMDV motors in the area of servo drive technology. These compact servomotors are integrated directly into the machine. Their innovative design, including the latest in winding and magnet technology, offers a wide variety of standstill torques as well as high overload capacities.



Their reliability and optimized size make these new compact CMDV servomotors an affordable solution for a variety of tasks in automation engineering.

Drive solutions with system properties for more functions and efficiency in any system: Compact CMDV servomotors with intelligent MOVIDRIVE® or modular MOVIAxis® inverters from SEW-EURODRIVE.

Driving the world – with innovative drive solutions for all branches of industry and for every application. Products and systems from SEW-EURODRIVE for any application – worldwide. SEW-EURODRIVE products can be found in a variety of industries, e. g. automotive, building materials, food and beverage as well as metal-processing. The decision to use drive technology “made by SEW-EURODRIVE” stands for safety regarding functionality and investment.



Compact CMDV servomotors – the ideal candidates for limited space

The compact CMDV servomotors come without housing and are convection cooled; they offer standstill torques from 0.25 to 32.0 Nm with an overload capacity of up to six times. Rounded off by strong bearings and a low-vibration design, the compact CMDV servomotors are the ideal candidates for applications with very little installation space and for all servo applications with direct drive.

The requirement:
Perfect system solutions for many applications with limited space.

The solution:
Dynamic power packages – the compact CMDV servomotors in connection with intelligent drive electronics and control technology from the SEW-EURODRIVE modular system.

The advantages at a glance	Drive solutions für more functions an efficiency in any system
<ul style="list-style-type: none"> – High dynamic properties – Very compact design – Maximum overload capacity – High quality of concentricity properties – Reduced masses – Direct drive technology – High degree of protection IP65 – Convection cooled servomotor – Minimal interference edges – HIPERFACE® encoder for all motors (optional) – DC 24 V holding brake (optional) – UL and CSA certification (optional) 	<ul style="list-style-type: none"> – MOVIAxis® multi-axis servo inverter – Intelligent MOVIDRIVE® inverter with integrated IPOS^{plus}® positioning and sequence control – MOVITOOLS® MotionStudio operating software with startup functions – Parameter setting instead of programming: Application modules and technology functions – Prefabricated servo cables – Engineering support – After sales support – CAD files for all motors – Comprehensive technical documentation



You can rely on SEW-EURODRIVE

CMDV servomotors

Size	n_N [rpm]	M_0 [Nm]	M_{pk} [Nm]	J [kgcm ²]	n_{max} [rpm]
CMDV 55 S	4,500	0.25	1.2	0.09	8,000
CMDV 55 M		0.45	2.3	0.15	
CMDV 55 L		0.9	6.0	0.27	
CMDV 70 S	1,200 / 3,000	0.7	2.8	0.26	6,000
CMDV 70 M		1.1	5.3	0.45	
CMDV 70 L		2.0	11.4	0.83	
CMDV 93 K	800 / 1,200 / 3,000	1.5	4.4	0.73	4,000
CMDV 93 S		2.5	10.3	1.35	
CMDV 93 M		4.2	22.0	2.55	
CMDV 93 L		6.5	38.0	3.74	
CMDV 138 K	600 / 1,200 / 2,000	4.0	8.1	4.13	2,500
CMDV 138 S		8.8	19.0	7.09	
CMDV 138 M		15.7	49.0	12.85	
CMDV 138 L		20.2	70.0	18.61	
CMDV 162 K	400 / 800 / 1,200	6.0	11.0	7.50	1,800
CMDV 162 S		13.5	28.0	12.89	
CMDV 162 M		24.0	63.0	23.64	
CMDV 162 L		32.0	104.0	34.60	

n_N = Rated speed, n_{max} = Maximum speed

Operating conditions

Ambient temperature [°C]	- 20 ... + 40 *
Installation height [m above sea level]	up to 1,000 *
Degree of protection	IP65
Thermal class	F
Feedback system	- Resolver - Optional with HIPERFACE® absolute encoder
Thermal motor protection	KTY
Bearing service life	L10h = 20,000 hours

* Note derating information in case maximum values are exceeded

Compact CMDV servomotors at work



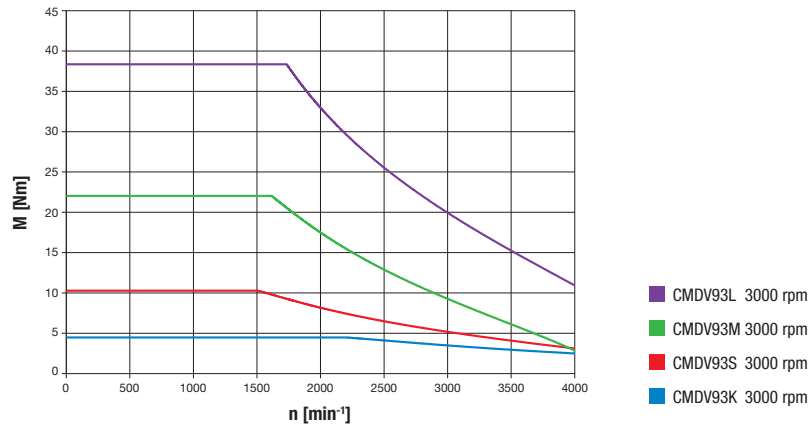
The high demands placed on compact design, dynamics as well as positioning and repeat accuracy make the CMDV servomotor an interesting candidate for use in machine tools. Wear and noise development are reduced because there is no need for mechanical components, such as gear units, ball screws or toothed belts. The high quality of concentricity and control make for an optimum result – as seen here when using the motor in an NC machine tool for turned parts.

The CMDV servomotors are also convincing in direct drives, such as toothed belt units. High overhung loads can be absorbed by an optimized flange without any problems. The high torque overload capacity that can be up to six times the rated torque makes for a quick generation and dosing of pressure or positioning of stops and fastening devices.

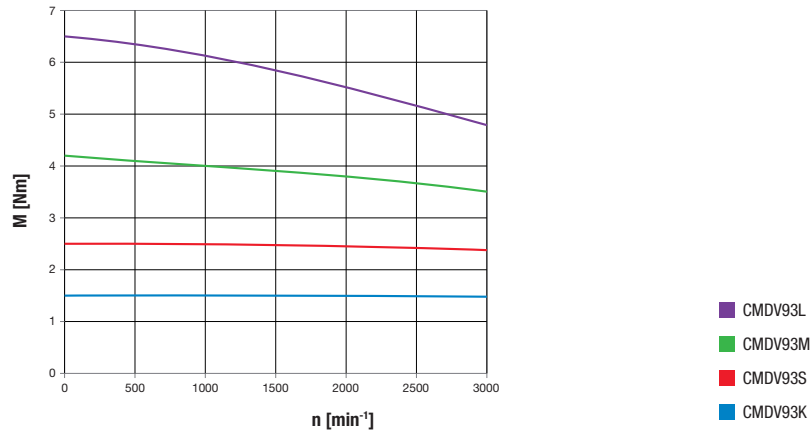


Motor characteristics with the CMDV 93 series as an example

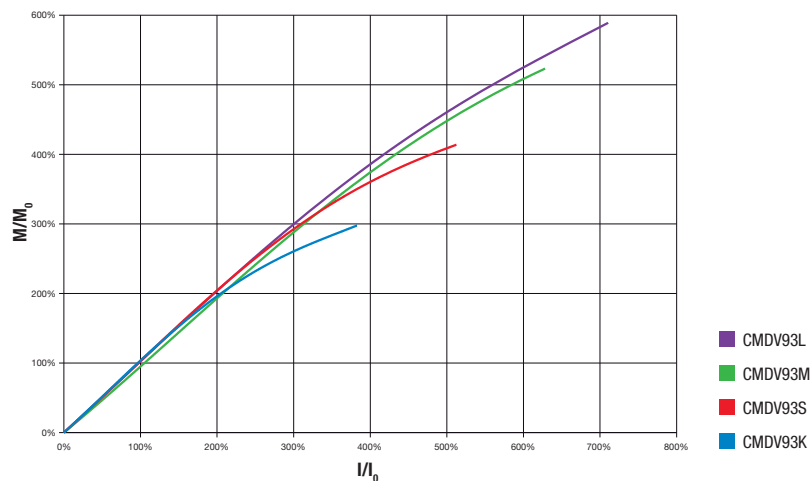
Limit torque characteristics
Dynamic for 400 V system voltage



Limit torque characteristics
Thermal for 400 V system voltage



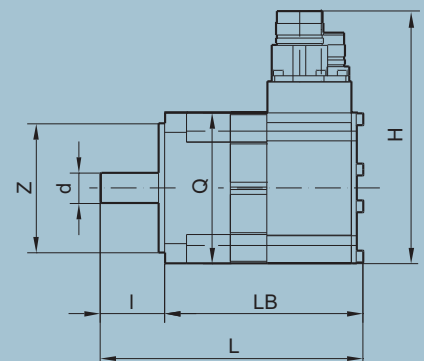
Torque-current characteristic



Installation dimensions and weights for resolver motor

Motor	n_N [rpm]	L [mm]	LB [mm]	H [mm]	Z [mm]	Q [mm]	Shaft d x l [mm]	m [kg]
CMDV 55 S	4,500	111	86	108	40	57	9x25	1.0
CMDV 55 M		129	104					1.3
CMDV 55 L		164	139					2.0
CMDV 70 S	1,200 / 3,000	127	97	120	60	70	14x30	1.6
CMDV 70 M		145	115					2.1
CMDV 70 L		180	150					3.0
CMDV 93 K	800 / 1,200 / 3,000	130	90	143	80	93	19x40	2.6
CMDV 93 S		148	108					3.5
CMDV 93 M		183	143					5.2
CMDV 93 L		218	178					6.8
CMDV 138 K	600 / 1,200 / 2,000	162	104	204	130	138	32x58	6.7
CMDV 138 S		180	122					8.8
CMDV 138 M		215	157					12.7
CMDV 138 L		250	192					16.6
CMDV 162 K	400 / 800 / 1,200	179	119	235	155	162	35x60	9.3
CMDV 162 S		197	137					12.0
CMDV 162 M		232	172					17.3
CMDV 162 L		267	207					22.5

n_N = Rated speeds
 L = Length without brake
 LB = Length without shaft end, without brake
 H = Total height without mating connector
 Z = Centering shoulder diameter
 Q = Square dimension of housing
 d x l = Diameter x length



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