

# HCL

## Low Voltage Servo Drive

In addition to the integrated controllers, the HCL servo controller series perfectly combines with our 24 V and 48 V motors of the HMD Next Generation series.

With a maximum current of up to 225 A peak, the controllers, in combination with our HMD servomotors, offer an ideal solution for demanding tasks.

This solution delivers an extremely cost-efficient package that includes a certified STO interface and UL Recognition.

Thanks to their freely programmable Motion Process Unit (MPU), the controllers are ideal for simple control tasks. An additional PLC is often not required. EtherCAT® or CANopen® are two of the most common and proven fieldbuses available for use with an external PLC.



### Technical data HCL

	HCL 60 C	HCL 120 C / E		HCL 225 CS	HCL 225 C / E	
Electronic supply voltage $U_e$	18-30 V	18-30 V		9-30 V	9-30 V	
Power supply voltage $U_p$	9-60 V	9-60 V		9-60 V	9-60 V	
Max. output current	42.5 A <sub>rms</sub>	85 A <sub>rms</sub>		159 A <sub>rms</sub>	159 A <sub>rms</sub>	
Continuous output current (UL/CE) $\leq 24$ V	14.5 A <sub>rms</sub>	-		54.5 A <sub>rms</sub>	54.5 A <sub>rms</sub>	
Continuous output current (UL/CE) $\leq 60$ V	9.5 A <sub>rms</sub>	18.5 A <sub>rms</sub>		46 A <sub>rms</sub>	46 A <sub>rms</sub>	
STO	Yes	Yes		Yes	Yes	
Encoder supply	5 V / 0.2 A	5 V / 0.2 A		5 V / 0.2 A	5 V / 0.2 A	
Motor feedback types	HES1-002 / 12 bit singleturn HES3 / 2048 ppr / 8192 cpr HS16 / 16 bit singleturn HM16 / 16 bit singleturn / 12 bit multiturn				HES3 / 2048 ppr / 8192 cpr	
Fieldbus	CAN	CAN	EtherCAT	CAN	CAN	EtherCAT
Galvanically isolated	No	No	Yes	Yes	Yes	
Size	78 x 74 x 29 mm	87 x 74 x 29 mm	87 x 74 x 49 mm	111 x 100 x 56 mm	111 x 100 x 39 mm	78 x 74 x 29 mm
Weight	95 g	155 g	226 g	451 g	451 g	630 g
Number of inputs/outputs	6 digital IN / 3 digital OUT / 1 analog IN			6 digital IN / 3 digital OUT / 2 analog IN		
Product numbers	12-001-014-22	12-001-014-20	12-001-014-21	12-001-014-19	12-001-014-17	12-001-014-18

# ■ Features and Accessories

## Features

- “Safe Torque Off (STO)” safety function
- Device status display via three LEDs
- Freely programmable MPU (**M**otion **P**rocess **U**nit)
  - simple PLC functionality
- Compact 4-quadrant controller
- Vector controlled
- Galvanically isolated fieldbus interfaces

## Accessories

### HCL stick – USB/CAN program interface

The HCL stick connects the HCL CAN controller to your Windows® computer via its USB interface. This makes it easy to commission, parameterize and program the controller using the software tools that we provide for the controllers.

### HCL brake – brake chopper for mains-powered systems

The HCL brake chopper effectively cuts overvoltages and redirects braking energy to an external load resistor. To protect all components in the DC link, the overvoltage threshold can be set using a DIP switch. The maximum peak braking current is 55 A when an external 1 Ohm load resistor is connected (not included in the scope of delivery).

The new highly dynamic HMD Next Generation servo motor series is ideal in combination with the HCL series. Compared to the predecessors of the HMD Next Generation series, these motors have a 20% shorter overall length and greatly optimized moments of inertia. The considerable reduction in length and the variety of flange sizes offer a highly dynamic solution for particularly small installation spaces. A large selection of voltage and power variants leave nothing to be desired.

Type	$U_{bus}$ [V <sub>DC</sub> ]	$M_o$ [Nm]	$M_n$ [Nm]	$n_n$ [min <sup>-1</sup> ]	$P_n$ (S1) [W]	Rated current [A <sub>rms</sub> ]	Stall current [A <sub>rms</sub> ]
HMD06	24 / 48	1.0	1.0	3,000	315	15.0	15.0
			1.0	6,000	630	15.0	15.0
	48	1.9	1.7	3,000	530	13.7	15.0
			2.6	2.5	3,000	785	19.0
			2.0	6,000	1250	28.7	36.4
HMD08	24 / 48	2.4	2.3	3,000	720	44.9 / 23.3	45.0 / 24.3
			2.1	5,500	1,210	42.0	45.0
		3.2	3.0	3,000	940	48.7 / 25.9	50.0 / 26.2
			2.6	5,500	1,500	44.0	50.0
		4.2	3.9	3,000	1,225	57.6 / 30.8	60.8 / 33
			3.4	5,500	1,950	52.3	60.8
5.7	5.3	3,000	1,665	45.8	48.0		
HMD10	48	3.9	3.6	3,000	1,130	32.9	34.6
			3.2	5,000	1,675	48.5	56.0
		5.7	5.2	3,000	1,635	44.4	47.1
			4.0	5,000	2,095	53.3	70.6
		7.6	6.5	3,000	2,000	50.3	57.7
10.5	8.6	3,000	2,700	70.6	82.3		



# ■ Option

## Planetary gearbox direct mounting

### Our standard motors with gearbox

#### Motors with **E**-gearbox (Economy series)

Economical gear units for standard applications  
Highest variance  
E07, E09 with square mounting flange  
E04, E06, E08 with round mounting flange

#### Motors with **P**-gearbox (Powerful economy)

Economical gear units  
Higher radial and axial forces

#### Motors with **H**-gearbox (Heavy duty)

Highest radial and axial forces

#### Motors with **F**-gearbox (Flange output)

Economical flange gearbox  
Output flange according to DIN ISO 9409  
High tilting rigidity

#### Motors with **V**-gearbox (Vehicle optimized)

Economical gearbox with flange output  
Compact design  
Optimized for use in mobile robots (AMR's, AVG's, etc.)  
High tilting rigidity

### Further variations: Angular gearbox from the modular system that can be combined with a motor and standard planetary gearbox.

For more information see HMD planetary gearbox catalog or flyer angular gearboxes.

Specifications subject to change! Last changes 09/2024