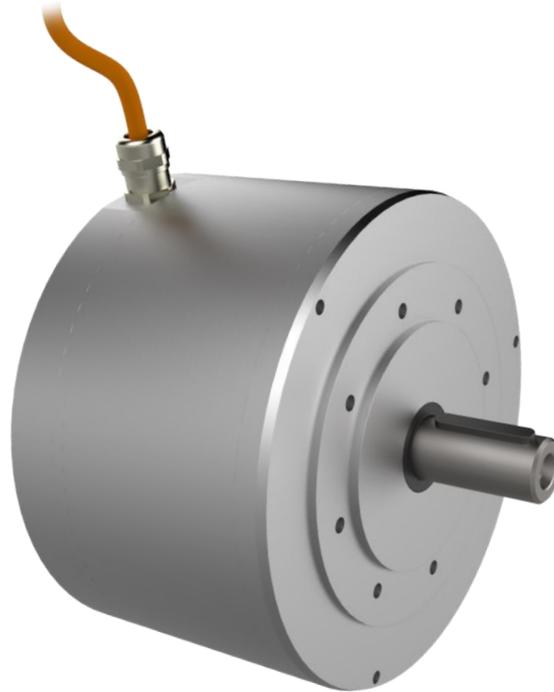


# *Synchronous motor* ***HYPERION 220***



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The HYPERION 220 motor from MTA Systems GmbH is a brushless synchronous motor with a housing outside diameter of 220 mm. The motor is designed as an internal rotor with 10 pairs of pins. In addition, the motor is equipped with high-energy magnets, which lead to high torques in relation to the volume. On request, the HYPERION 220 is also available in different lengths and therefore, with different nominal moments. As a slow-running drive with an output class up to 1037 W, motors of the HYPERION 220 series are therefore used in a wide variety of applications.

## Characteristics

### Areas of applications & applications

- Drive tasks for in-house material transport
- General industrial applications
- Lifting applications

### The specific benefits

- Maintenance-free synchronous technology with high efficiency
- Extremely low noise due to low speed
- Long service life
- Large selection of various attachments (brakes, sensor system, gears,...)
- On request, the HYPERION 220 can be further configured (length, nominal speed, ...) which makes it possible to select the perfect drive for your requirements.

### Technical features & highlights

- Very high torque of more than 80 Nm and high overload capacity
- Energy efficiency thanks to synchronous technology
- High torque with compact dimensions
- Various encoder systems possible with up to 12 bit resolution



## Technical data

General technical data		
Stator outer diameter	mm	200
Stator outer diameter	mm	133.5
Laminated core length	mm	70
Number of grooves		24
Number of pin pairs		10
Winding connection		Star, series
Noise level	dB	< 50dB
Length of motor cable	mm	500*
Motor length	mm	217.5 mm with output shaft and encoder mounting
Ambient temperature	°C	0 to 40
Version A side		IEC100-B14, mounting for planetary gearbox
Version B side		Brake, magnetic angle encoder, resolver, sin-cos encoder
Motor housing wall thickness	mm	10
Motor housing material		Aluminium
Housing paint		According to customer requirements
Maximum radial shaft load		Depending on customer requirement



\*Dimensions can be adapted according to the customer.

## Performance data

Motor performance data		HYPERION 220E70D
Nominal voltage	VAC	400
Nominal current	A	2.43
Nominal torque	Nm	20
Nominal speed	rpm	220
Permissible peak current	A	4.65
Holding torque	Nm	81
Idling speed	rpm	330
Continuous power output	W	1037
Maximum power output	W	1442
Torque constant at 90°C magnet temperature	Nm/A	18.518
Voltage constant at 90°C magnet temperature	V/rpm	1.1675
Strand resistance at 20°C winding temperature	Ω	11.2
Connection inductance $L_q$	mH	99.99
Connection inductance $L_d$	mH	85.9

## Angle encoder

Motors of the HYPERION 220 series are available with various angle encoder systems for motor commutation.

### With magnetic angle encoder:

The magnetic encoder is a cheap and reliable system for angle determination. Due to the good value for money and the wide industrial distribution, the HYPERION 220 is most often produced in this version with magnetic angle encoder for angle-dependent commutation. For this purpose, a small magnet is placed in the B-side stub shaft and its orientation is determined using a reverberation bridge. The signals from the reverberation bridge are converted directly into digital signals which are readable by the motor controller on the motor-integrated encoder board with a resolution of up to 1024 increments (incremental A-track, B-track and index signal with 5V signal level, all differentially executed).

Magnetic angle encoder		
Type		magnetic encoder
Supply voltage	VDC	5
Signals		A, A/, B, B/, I, I/, PWM, PWM/
Increments per revolution		1024
Resolution	Bit	12

### With resolver:

On customer request, the HYPERION 220 is supplied with a resolver or sin- cos encoder.

### Without encoder system:

The HYPERION 220 motor complete without angle encoder system offers the possibility of mounting a third-party angle encoder yourself.

## Brakes

The motors of the HYPERION 220 series can be optionally equipped with electromagnetic brakes. Preferably spring brakes are used, optional permanent magnet brakes are possible. Depending on customer requirements, both holding brakes (standard version - holding the load at standstill) and service brakes are available here. For the special case that particularly high braking torques are required with a limited diameter at the same time, it is also possible to attach double rotor brakes to the HYPERION 220.

## Terminal configuration



The HYPERION 220 connecting cable is supplied with open connection ends. On request, the delivery can be made with pre-assembled connectors. M16 circular connectors from MTA Systems are recommended for this purpose.

## Motor cable

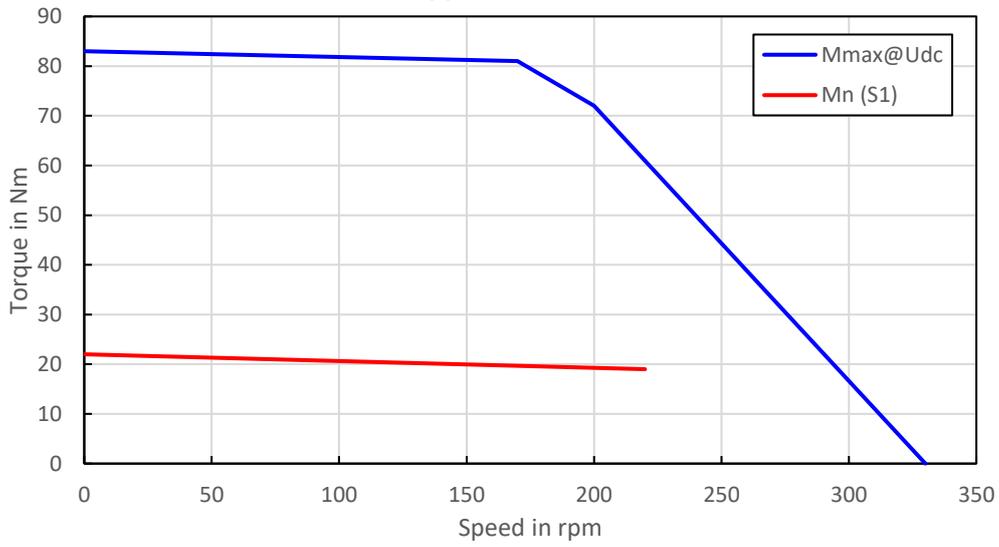
Signal	Description	Wire colour
U	Motor phase U	Black labelled with U / L1
V	Motor phase V	Black labelled with V / L2
W	Motor phase W	Black labelled with W / L3
PE	GND	Yellow/green
T1	Temperature sensor +	White
T2	Temperature sensor -	Black

## Signal cable with magnetic angle encoder

Signal	Description	Wire colour
5 VDC	Supply +	Green / white
GND	Ground	Green / brown
A+	Track A	Red
B+	Track B	Grey
I+	Track I	Yellow
A-	inv. Track A	Black
B-	inv. Track B	Pink
I-	inv. Track I	Purple
PWM+	Track PWM	Brown
PWM-	inv. Track PWM	Green
BR1	Brake +	Blue
BR2	Brake -	White

Motor characteristic

Hyperion 220E70D



Dimensions

