

1 PLATFORM.
3 ELECTRONIC-SERIES.

- PERFORMANCE
- BASIC
- ECONOMY



Decentralized drive solutions

■ Introduction

The HMPi/a and HMDi/a motors evolve to decentralized drive concepts based on 24 / 48 V and 230 V. By integrating the servo controllers, control cabinets can be virtually eliminated and the wiring effort can be significantly reduced. These modern and compact drive concepts can be integrated into a wide range of automation solutions and enable flexible and cost-effective applications. All integrated motors come with an IP protection class of IP65 (except for output shaft, here IP21).

The **HeiTronX** series with integrated and top-mounted electronics are build on two different motor series...

- HMP - HeiMotion Premium
- HMD - HeiMotion Dynamic

... and is available in three standard flange sizes:

- 40 mm - HMP04
- 60 mm - HMD06
- 80 mm - HMP08 / HMD08

The features at a glance:

- High efficiency
- Optimized moment of inertia
- Long lifetime
- Compact design
- High power density
- Low cogging torque
- Energy efficiency
- Optimized temperature management
- Highest synchronism and accuracy (HeiTronX Performance, HTP)


CANopen®

EtherCAT®



■ Content

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Servo motors HeiTronX **Economy** - CANopen

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■ Overview - Economy



As the slimmest model in the HTX series, the HTE is characterized by its compact design and high efficiency. With an integrated single or multiturn encoder, the HTE enables many different applications in drive technology. The standardized CANopen communication protocol allows the HTE to be integrated into commercially available control systems.

Its outstanding suitability for large-scale projects is based on optimum adaptability. Designed for quantity projects, it not only meets technical conditions, but also offers economic advantages. Ideal for applications in automated warehouses, AGVs (Automated Guided Vehicles), robotic systems and mobile applications.

In terms of design, the HTE offers a space-saving solution with overall lengths between 123.5 mm and 232 mm. Optionally available holding brakes and a wide range of connection options complete the profile of the HTE as a future-proof drive solution.

The HeiTron Economy actuators are available in three different flange sizes:

- 40 mm - HMPi04
- 60 mm - HMDi06
- 80 mm - HMDa08

Servo motors HeiTronX Economy - CANopen

Type	Supply voltage [V]	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]	Motor	Page				
HMPi04 HTE	24 V _{DC}	3,000	0.16	0.3	HMP04-002	p. 14				
			0.20	0.3	HMP04-004					
	48 V _{DC}	3,000	0.16	0.4	HMP04-002					
			0.25	0.4	HMP04-004					
		6,000	0.13	0.3	HMP04-002					
			0.17	0.3	HMP04-004					
HMDi06 HTE	24 V _{DC}	3,000	0.40	0.9	HMD06-005	p. 16				
			0.50	0.9	HMD06-010					
			0.60	0.9	HMD06-015					
			0.75	1.0	HMD06-020					
		6,000	0.20	0.4	HMD06-005					
			0.30	0.5	HMD06-010					
			0.35	0.5	HMD06-015					
			0.40	0.5	HMD06-020					
	48 V _{DC}	3,000	0.30	1.8	HMD06-005					
			0.40	1.8	HMD06-010					
			0.60	1.8	HMD06-015					
			0.90	1.8	HMD06-020					
		6,000	0.30	0.9	HMD06-005					
			0.35	0.9	HMD06-010					
			0.40	0.9	HMD06-015					
			0.50	0.9	HMD06-020					
			HMDa08 HTE	24 V _{DC}	3,000		1.0	2.1	HMD08-020	p. 20
							1.2	2.4	HMD08-028	
1.3	2.6	HMD08-035								
1.5	3.0	HMD08-050								
5,500	0.7	1.4			HMD08-020					
	0.8	1.6			HMD08-028					
	0.9	1.8			HMD08-035					
	1.0	2.0			HMD08-050					
48 V _{DC}	3,000	1.0		3.5	HMD08-020					
		1.4		3.9	HMD08-028					
		1.8		4.1	HMD08-035					
		2.3		4.5	HMD08-050					
	5,500	0.6	2.0	HMD08-020						
		0.8	2.3	HMD08-028						
		1.0	2.4	HMD08-035						
		1.2	2.6	HMD08-050						

■ Overview - Basic



The newly developed drive solution HeiTronBasic, HTB for short, expands the versatile product range of the HeiTronX platform. The HTB line presents high performance in a compact installation space and can be combined with single and multiturn encoders. Among other features, it convinces with reverse polarity protection and the important safety function Safe Torque Off (STO).

The galvanic isolation of the digital inputs and outputs also provides special protection for the control system and facilitates integration into complex control systems. For operation in AGVs, for example, the two-channel STO, safe encoder signals and the brake supply can be provided to the high level safety. This flexibility enables integration into a wide range of applications. The maximum supply voltage is 72 V_{DC} and thus covers the common battery voltages.

The servo motors of the HMD series serve as the basis of the drive system, offering a high degree of modularity, especially in the 48 V_{DC} range. The extension of the interfaces by CANopen (galvanically isolated) and EtherCAT connections, there are additional advantages in terms of speed and compatibility with common industrial controllers.

The HeiTron Basic drives are available in two different flange sizes:

- 60 mm - HMDi06
- 80 mm - HMDi08

Servo Motors HeiTronX Basic - EtherCAT, CANopen

Type	Supply voltage [V]	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]	Motor	Page
HMDi06 HTB	48 V _{DC}	3,000	0.8	2.5	HMD06-011	p. 22
			1.2	3.5	HMD06-019	
			1.4	4.5	HMD06-026	
		6,000	0.4	1.2	HMD06-011	
HMDi08 HTB	48 V _{DC}	3,000	1.5	6.0	HMD08-024	p. 24
			2.0	8.0	HMD08-032	
			2.3	8.8	HMD08-042	
			2.4	8.8	HMD08-057	
		5,500	0.8	3.0	HMD08-024	
			1.0	4.0	HMD08-032	
			1.2	4.8	HMD08-042	

Characteristics calculated / after simulation

Luminous band

The HTB drive is characterized in particular by its innovative 360° light band. This luminous band encompasses the entire motor and thus ensures uniform and uninterrupted visibility from any viewing angle.

Thanks to the integrated, intelligent control, users have the option of adjusting the brightness and color selection of the LEDs according to their individual preferences. This not only offers individual use, but also contributes to energy efficiency.



■ Overview - Performance



The HTP/ACTILINK drive solution expands the portfolio of integrated servo motors and combines high performance with compact installation space. In addition, important safety functions such as Safe Torque Off (STO) and Safe Brake Control (SBC) are already available.

The servo motors from the HeiMotion Dynamic series with flange sizes of 60 mm and 80 mm serve as the basis for the new drive system, which offers a high degree of modularity in the range up to 48 V_{DC}. EtherCAT is available as a standard fieldbus interface. This is considered a real-time capable standard for industrial applications.

The integrated servo controller comes from the HeiTronX electronics series. The motors are preconfigured ready for operation and can be further adapted via a convenient and intuitive user interface. Extensive analysis options for the application round off the software package.

The HTP/ACTILINK is a motor with integrated controller for the highest requirements in terms of compactness, precision and dynamics. The deciding factor here is the combination of extremely power-dense motors with optimized windings, as well as extremely compact servo controllers, in a perfectly adapted housing.

The HeiTron Performance drives are available in two different flange sizes:

- 60 mm - HMDi06
- 80 mm - HMDi08 / HMPa08

Servo motors HeiTronX Performance - EtherCAT, CANopen

Type	Supply voltage [V]	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]	Motor	Page
HMDi06 HTP	48 V _{DC}	3,000	0.75	2.00	HMD06-011	p. 26
			1.12	4.00	HMD06-019	
			1.32	5.90	HMD06-026	
HMDi08 HTP	48 V _{DC}	3,000	1.25	4.70	HMD08-024	p. 28
			1.85	6.90	HMD08-032	
HMPa08 HTP	230 V _{AC}	3,000	1.42	10	HMP08-028	p. 30

*only for HMPa08 HTP

Light lens

Our HTP drive is equipped with the innovative and generously designed „Advanced Light Lens Technology“. This guarantees excellent and clear results even in challenging lighting conditions. With the combination of three basic colors that are directly controlled, it opens up a wide range of color variations that enable numerous display options. Our high-quality lenses are robust and designed for use in demanding industrial environments.



■ General data

Ambient conditions and technical characteristics

Motor type	permanently excited synchronous servo motor	
Ambient operating temperature	- 10 °C to + 40 °C	
Ambient storage temperature	- 25 °C to + 70 °C	
Humidity	< 90 % relative humidity (without condensation)	
Insulation class	F (= up to 155 °C)	
Protection class	IP65 in standard and with connected connection cables. IP21 when not installed (AS side) and/or without connecting cables	
Cooling	Natural convective	
Bearing lifetime	20,000 h under rated operation conditions (M_n)	
Temperature sensor	KTY84-130	
Maximum altitude	4,000 meters above sealevel; derate 1% per 100 meters above 1,000 meters	
Concentricity, coaxiality, and axial run-out	N (normal) per DIN 42955	
Vibration	Stage N in accordance to ISO 2373	
Cogging torque factor c_t	HMP04 HMD06 HMD08 HMP06 HMP08	< 2.8 % based on the stall torque (M_0) < 2.0 % based on the stall torque (M_0) < 1.5 % based on the stall torque (M_0) < 2.5 % based on the stall torque (M_0) < 2.0 % based on the stall torque (M_0)
Coating	Black top coat, RAL 9005	
Magnet material	Neodymium-Iron-Boron (NdFeB)	
Shaft end	Cylindrical shaft end with / without keyway	
Balancing quality	Q 2.5	
Encoder systems	Singleturn / Multiturn	
Identification and test sign	CE (if applicable), UL on request	
Brake	See catalogs: HMD - Servo drive systems, HMD Next Generation - Servo drive systems, HMP - Servo drive systems	

Formula symbol

Abbr.	Unit	Explanation
M_0	[Nm]	Stall torque (stall torque at S1)
M_n	[Nm]	Rated torque (continuous torque at S1)
M_{max}	[Nm]	Peak torque (maximum permissible torque for short periods)
n_n	[rpm]	Rated speed

Functional description

Name	Description
AIN+	Analog input + (differential)
AIN-	Analog input - (differential)
AOUT	Analog output
Brake +	External brake Supply +
Brake -	External brake Supply -
DIN	Digital input +
DIN Return	Reference for digital input
DIN COM	Reference potential for digital inputs
DOUTC	Digital output collector pin
DOUTE	Digital output emitter pin
FE	Functional earth
L	Phase conductor
N	Neutral conductor
PE	Protective earth
RX+	Receive data + (differential)
RX-	Receive data - (differential)
SBC	Safe Break Control
STO A	STO channel A (two-channel safety function "Safe Torque Off", at HMPa 08 HTP)
STO B	STO channel B (two-channel safety function "Safe Torque Off", at HMPa 08 HTP)
STO1	STO channel 1 (two-channel safety function "Safe Torque Off")
STO1+	STO input 1 + (differential)
STO1-	STO input 1 - (differential)
STO2	STO channel 2 (two-channel safety function "Safe Torque Off")
STO2+	STO input 2 + (differential)
STO2-	STO input 2 - (differential)
STOFB	STO feedback +
STORTN	STO feedback -
STOGND	Reference for STO Input
TX+	Transmission data + (differential)
TX-	Transmission data - (differential)
ZK+	DC-Supply +
ZK-	DC-Supply -

Order Code

HeiMotion - Integrated servo drive

HMD06-015-048-30-B0ES2Y170

<p>Motor type</p> <p>Premium → P Dynamic → D</p> <p>Frame/flange size</p> <p>40 mm → 04 60 mm → 06 80 mm → 08</p> <p>Coil size</p> <p>HMP04 → 002 → 004</p> <p>HMD06 → 005 → 010 → 011 → 015 → 019 → 020 → 026</p> <p>HMD08 → 024 → 028 → 032 → 035 → 042</p> <p>Supply voltage</p> <p>24 V → 024 48 V → 048</p> <p>Rated speed</p> <p>3,000 rpm → 30 5,500 rpm → 55 6,000 rpm → 60</p>	<p>Options</p> <p>Without brake 0 X X X X X X X X With brake 24 V_{DC} B X X X X X X X X</p> <hr/> <p>Without feather key X 0 X X X X X X X With feather key X P X X X X X X X</p> <hr/> <p>Singleturn encoder X X X S X X X X X Multiturn encoder X X X M X X X X X</p> <hr/> <p>HeiTronX Economy (HTE) X X I X X X X X X Supply for power and logic separated X X I X 1 X X X X Supply for power and logic combined X X I X 2 X X X X Y-Tec CAN-Assembly X X I X X Y 1 7 X Y-Tec Analog-Assembly X X I X X Y 1 A X I-Tec CAN-Assembly X X I X X I 1 7 X</p> <hr/> <p>HeiTronX Basic (HTB) X X B X X X X X X CANopen X X B X C X X X X EtherCAT X X B X E X X X X M23 straight, supply for power and logic separated X X B X A X X X X M23 angled, supply for power and logic separated X X B X B X X X X M23 straight, supply for power and logic combined X X B X C X X X X M23 angled, supply for power and logic combined X X B X D X X X X I-Tec straight, supply for power and logic separated X X B X E X X X X I-Tec angled, supply for power and logic separated X X B X F X X X X I-Tec straight, supply for power and logic combined X X B X G X X X X I-Tec angled, supply for power and logic combined X X B X H X X X X</p> <hr/> <p>Without safety connector X X B X X X 0 X X Safety M8, STO X X B X X X 1 X X</p> <hr/> <p>Without I/O connector X X B X X X X 0 X I/O M8, 8-pin X X B X X X X 1 X I/O M12, 12-pin X X B X X X X 2 X</p> <hr/> <p>HeiTronX Performance (HTP) X X A X X X X X X 12 bit, EtherCAT X X A X 1 X X X X 16 bit, EtherCAT X X A X 2 X X X X Connector: horizontal X X A X X H X X X Connector: vertical X X A X X V X X X Connector M16 X X A X X X 1 6 X</p> <hr/> <p>Without RWDR X X X X X X X 0 With RWDR X X X X X X X W</p>
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Example: HMD06-015-048-30-B0ES2Y170

HeiMotion Dynamic	Options:
Frame/flange size 60 mm	With brake
Coil size 015	Without feather key
Supply voltage 48 V	Electronic-Series: HTE
Rated speed 3,000 rpm	Singleturn encoder
	Supply combined
	Y-Tec connector
	Without radial shaft seal

HeiMotion - Attached servo drive

HMP08-028-230-30-B0R1PE01W

<p>Motor type Premium → P Dynamic → D</p> <p>Frame/flange size 60 mm → 06 80 mm → 08</p> <p>Coil size</p> <table border="1"> <tr><td>HMD06</td><td>→ 005</td></tr> <tr><td></td><td>→ 010</td></tr> <tr><td></td><td>→ 015</td></tr> <tr><td></td><td>→ 020</td></tr> <tr><td>HMP08</td><td>→ 028</td></tr> <tr><td></td><td>→ 020</td></tr> <tr><td></td><td>→ 028</td></tr> <tr><td>HMD08</td><td>→ 035</td></tr> <tr><td></td><td>→ 050</td></tr> </table> <p>Supply voltage 24 V → 024 48 V → 048 230 V_{AC} → 230</p>	HMD06	→ 005		→ 010		→ 015		→ 020	HMP08	→ 028		→ 020		→ 028	HMD08	→ 035		→ 050	<p>Options</p> <table border="0"> <tr><td>Without brake</td><td>0XXXXXXXXX</td></tr> <tr><td>With brake 24 V_{DC}</td><td>BXXXXXXXXX</td></tr> <tr><td colspan="2">-----</td></tr> <tr><td>Without feather key</td><td>X0XXXXXXXXX</td></tr> <tr><td>With feather key</td><td>XPXXXXXXXXX</td></tr> <tr><td colspan="2">-----</td></tr> <tr><td>Resolver</td><td>XXR1PXXXXX</td></tr> <tr><td>HES 1</td><td>XXM2SXXXXX</td></tr> <tr><td>HEM 1</td><td>XXM2MXXXXX</td></tr> <tr><td>SEK 37</td><td>XXH1SXXXXX</td></tr> <tr><td>SEL 37</td><td>XXH1MXXXXX</td></tr> <tr><td>SKS 36</td><td>XXH2SXXXXX</td></tr> <tr><td>SKM 36</td><td>XXH2MXXXXX</td></tr> <tr><td>SRS 50</td><td>XXH3SXXXXX</td></tr> <tr><td>SRM 50</td><td>XXH3MXXXXX</td></tr> <tr><td colspan="2">-----</td></tr> <tr><td>HeiTronX Economy</td><td>XXXXXE01X</td></tr> <tr><td>HeiTronX Performance CANopen</td><td>XXXXXM05X</td></tr> <tr><td>HeiTronX Performance EtherCAT</td><td>XXXXXM06X</td></tr> <tr><td>HeiTronX Performance PROFINET</td><td>XXXXXM07X</td></tr> <tr><td colspan="2">-----</td></tr> <tr><td>Without radial shaft seal</td><td>XXXXXXXXX0</td></tr> <tr><td>With radial shaft seal</td><td>XXXXXXXXXW</td></tr> </table> <p>Rated speed 3,000 rpm → 30 5,500 rpm → 55 6,000 rpm → 60</p>	Without brake	0XXXXXXXXX	With brake 24 V _{DC}	BXXXXXXXXX	-----		Without feather key	X0XXXXXXXXX	With feather key	XPXXXXXXXXX	-----		Resolver	XXR1PXXXXX	HES 1	XXM2SXXXXX	HEM 1	XXM2MXXXXX	SEK 37	XXH1SXXXXX	SEL 37	XXH1MXXXXX	SKS 36	XXH2SXXXXX	SKM 36	XXH2MXXXXX	SRS 50	XXH3SXXXXX	SRM 50	XXH3MXXXXX	-----		HeiTronX Economy	XXXXXE01X	HeiTronX Performance CANopen	XXXXXM05X	HeiTronX Performance EtherCAT	XXXXXM06X	HeiTronX Performance PROFINET	XXXXXM07X	-----		Without radial shaft seal	XXXXXXXXX0	With radial shaft seal	XXXXXXXXXW
HMD06	→ 005																																																																
	→ 010																																																																
	→ 015																																																																
	→ 020																																																																
HMP08	→ 028																																																																
	→ 020																																																																
	→ 028																																																																
HMD08	→ 035																																																																
	→ 050																																																																
Without brake	0XXXXXXXXX																																																																
With brake 24 V _{DC}	BXXXXXXXXX																																																																

Without feather key	X0XXXXXXXXX																																																																
With feather key	XPXXXXXXXXX																																																																

Resolver	XXR1PXXXXX																																																																
HES 1	XXM2SXXXXX																																																																
HEM 1	XXM2MXXXXX																																																																
SEK 37	XXH1SXXXXX																																																																
SEL 37	XXH1MXXXXX																																																																
SKS 36	XXH2SXXXXX																																																																
SKM 36	XXH2MXXXXX																																																																
SRS 50	XXH3SXXXXX																																																																
SRM 50	XXH3MXXXXX																																																																

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HeiTronX Performance PROFINET	XXXXXM07X																																																																

Without radial shaft seal	XXXXXXXXX0																																																																
With radial shaft seal	XXXXXXXXXW																																																																

Attached servo drive

Example: HMP08-028-230-30-B0M2SE01W

<p>HeiMotion Premium</p> <p>Frame/flange size 80 mm</p> <p>Coil size 028</p> <p>Supply voltage 230 V_{AC}</p> <p>Rated speed 3,000 rpm</p>	<p>Options:</p> <p>With brake</p> <p>Without feather key</p> <p>HES 1 encoder</p> <p>HeiTronX Economy</p> <p>With radial shaft seal</p>
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HMPi04 HTE

with integrated electronics



Specifications - motors

Type	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]
HMPi04 - 24 V_{DC}			
HMP04-002	3,000	0.16	0.30
HMP04-004	3,000	0.20	0.30
HMPi04 - 48 V_{DC}			
HMP04-002	3,000	0.16	0.40
HMP04-002	6,000	0.13	0.30
HMP04-004	3,000	0.25	0.40
HMP04-004	6,000	0.17	0.30

Specifications - motor with integrated servo drive

Power supply	Voltage	22 - 53 V _{DC}
	Current	9 A _{DC} *
Logic supply**	Voltage	18 - 48 V _{DC}
Interfaces	CANopen	
Parameter setting software	Heidrive Drive Manager (HeidriveGUI)	
Inputs	1 x analog input (0 - 10 V, differential, 10-bit A _{DC}) 4 x digital input (24 V, dedicated): direction, emergency-shutdown, emergency-stop, start	
Outputs	1 digital output (Open-Drain, reserved) 3 x digital output (Open-Drain, dedicated): error, ready, speed	
Brake control	integrated	
Holding brake	optional (see page 6)	
Connectors	I-Tec / Y-Tec	
Encoder system	single-turn, multi-turn	

* At 48 V_{DC}

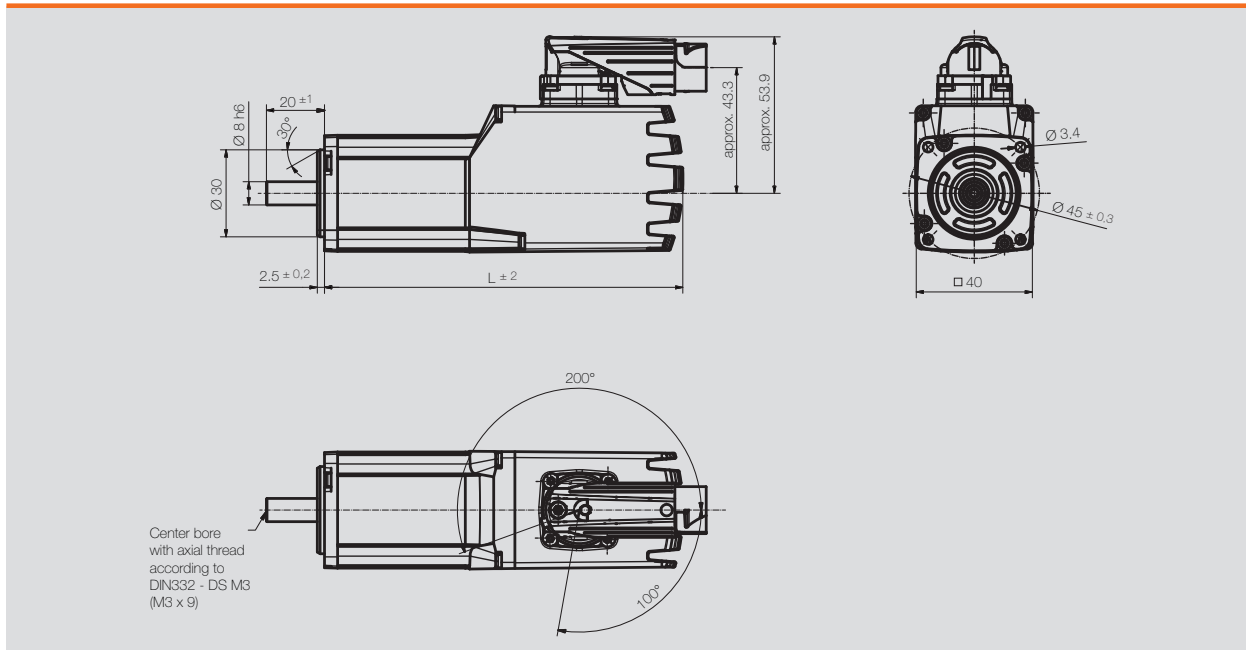
** Power and logic supply can be separated or combined (see order code)

UL on request.

Lengths HMPi04 HTE (24 / 48 V_{DC})

		L
HMP04-002	without brake	123.5 mm
HMP04-002	with brake	158.5 mm
HMP04-004	without brake	148.5 mm
HMP04-004	with brake	183.5 mm

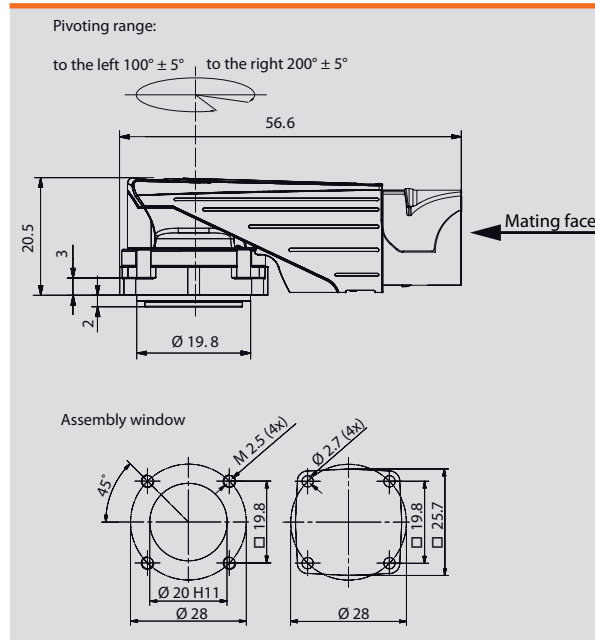
Dimensions HMPio4 HTE



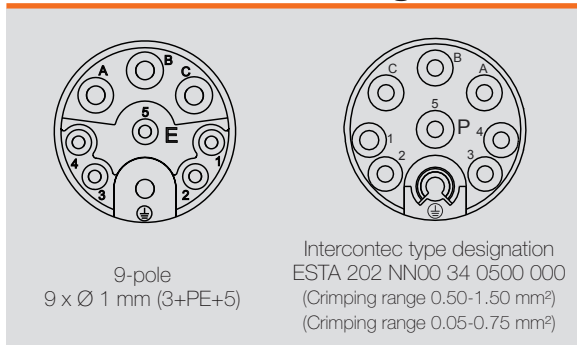
I-Tec CANopen

Pin	1) Only at IS1 / IM1 2) Only at IM1 / IM2 3) Only at IS2
A	POWER SUPPLY
B	GND
C	LOGIC SUPPLY ¹⁾
\oplus	-
1	CAN_L
2	CAN_H
3	Standby (+) ²⁾
4	CAN_GND
5	Standby (-) ²⁾

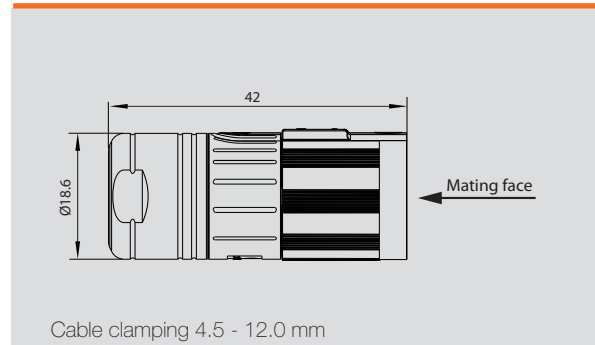
Motor connector



Motor connector Mating connector



Mating connector



HMDio6 HTE

with integrated electronics



Specifications - motors

Type	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]
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HMDio6 - 24 V_{DC}

HMD06-005	3,000	0.4	0.9
HMD06-005	6,000	0.2	0.4
HMD06-010	3,000	0.5	0.9
HMD06-010	6,000	0.3	0.5
HMD06-015	3,000	0.6	0.9
HMD06-015	6,000	0.35	0.5
HMD06-020	3,000	0.75	1.0
HMD06-020	6,000	0.4	0.5

HMDio6 - 48 V_{DC}

HMD06-005	3,000	0.3	1.8
HMD06-005	6,000	0.3	0.9
HMD06-010	3,000	0.4	1.8
HMD06-010	6,000	0.35	0.9
HMD06-015	3,000	0.6	1.8
HMD06-015	6,000	0.4	0.9
HMD06-020	3,000	0.9	1.8
HMD06-020	6,000	0.5	0.9

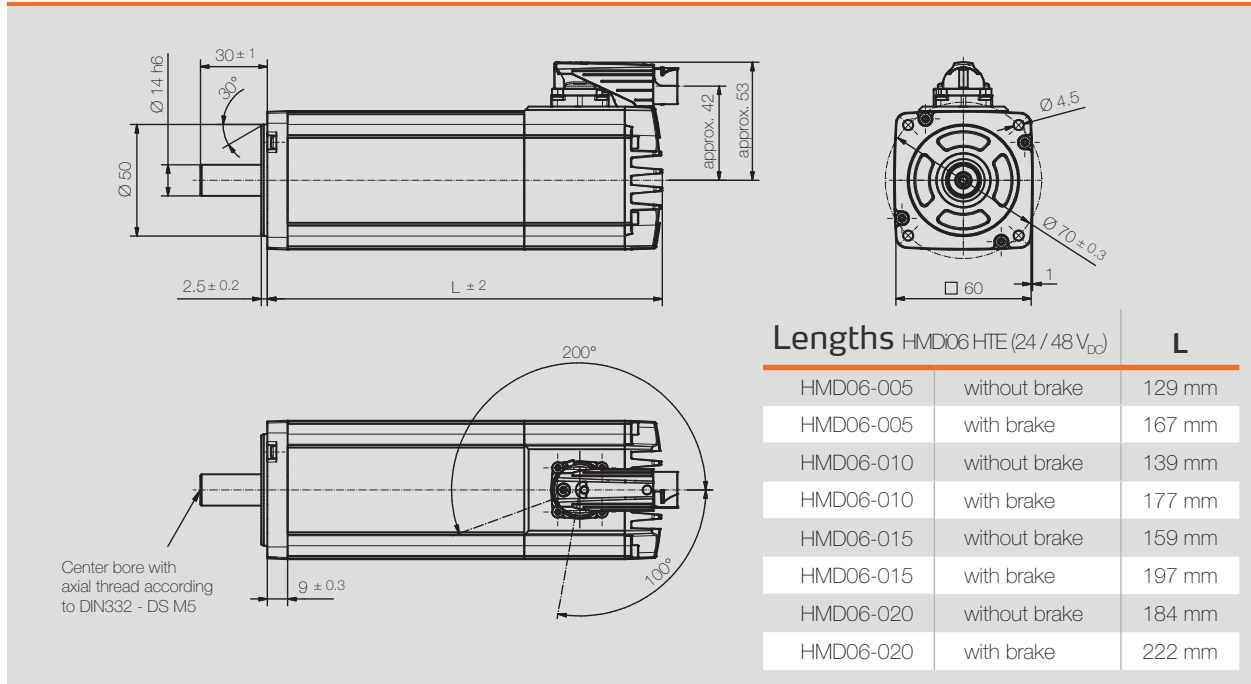
Specifications - motor with integrated servo drive

Power supply	Voltage	22 - 53 V _{DC}
	Current	16 A _{DC} *
Logic supply**	Voltage	18 - 48 V _{DC}
Interfaces	CANopen	
Parameter setting software	Heidrive Drive Manager (HeidriveGUI)	
Inputs	1 x analog input (0 - 10 V, differential, 10-bit ADC) 4 x digital input (24 V, dedicated): direction, emergency-shutdown, emergency-stop, start	
Outputs	1 x digital output (Open-Drain, reserved) 3 x digital output (Open-Drain, dedicated): error, ready, speed	
Brake control	integrated	
Holding brake	optional	
Connectors	I-Tec / Y-Tec	
Encoder system	singleturn, multiturn	

* At 48 V_{DC}

** Power and logic supply can be separated or combined (see order code)

Dimensions HMDio6 HTE

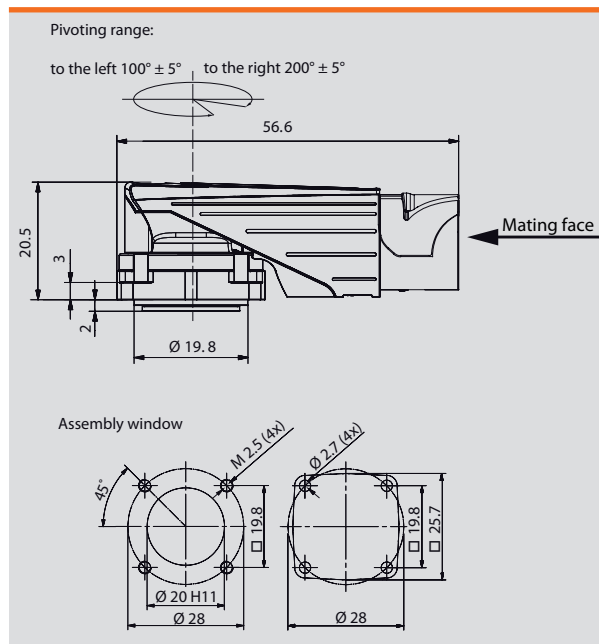


I-Tec CANopen

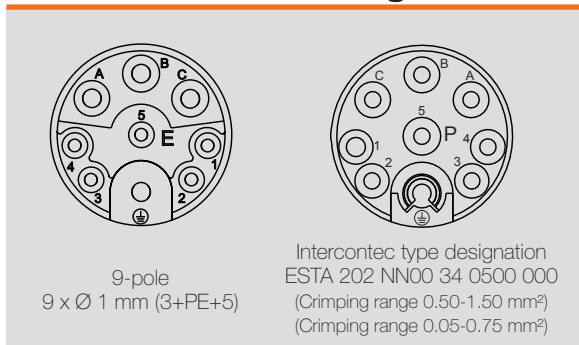
Pin	
A	POWER SUPPLY
B	GND
C	LOGIC SUPPLY ¹⁾
\oplus	PE
1	CAN_L
2	CAN_H
3	Standby (+) ²⁾
4	CAN_GND
5	Standby (-) ²⁾

1) Only at IS1 / IM1
2) Only at IM1 / IM2
3) Only at IS2

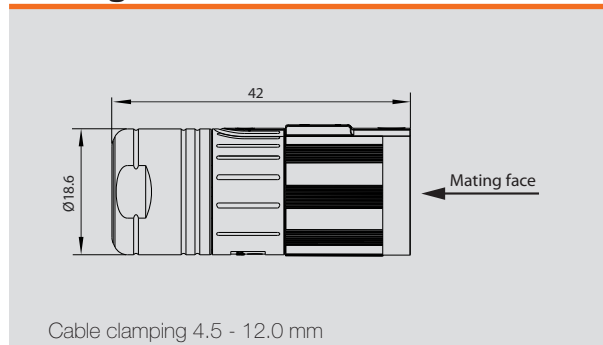
Motor connector



Motor connector Mating connector



Mating connector



Option connector for HMDi HTE

Y-Tec CAN

Pin	Name	Pin	Name
A	POWER	1	CAN_L
B	GND	2	CAN_H
C	LOGIC ¹⁾	3	-
PE	PE	4	-
1	-	5	-
2	-	6	Standby(+) ⁴⁾
3	-	7	-
4	-	8	-
5	-	9	CAN_GND
		10	Standby (-) ⁴⁾
		11	-
		12	-

1) Only at IS1 / IM1

2) According to DIN EN 60204-1: Stop Category 0

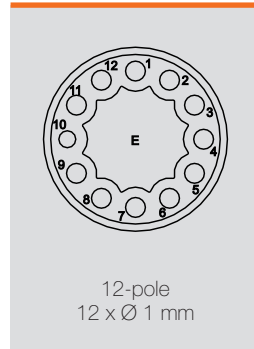
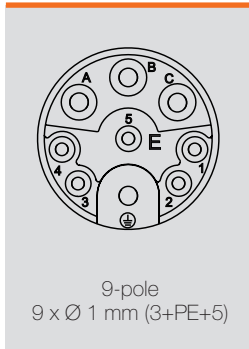
3) According to DIN EN 60204-1: Stop Category 1

4) Only at IM1 / IM2

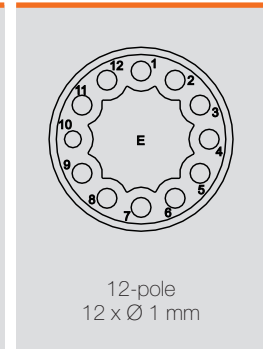
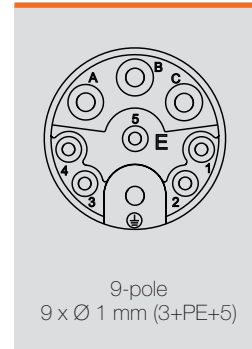
Y-Tec analog

Pin	Name	Pin	Name
A	POWER	1	Analog GND
B	GND	2	Analog Speed
C	LOGIC ¹⁾	3	DOUT1
PE	PE	4	Emergency- Shutdown ²⁾
1	CAN_L	5	Emergency- Stop ³⁾
2	CAN_H	6	Standby(+) ⁴⁾
3	-	7	Direction
4	CAN_GND	8	Start
5	-	9	DGND
		10	Standby (-) ⁴⁾
		11	Error
		12	Ready

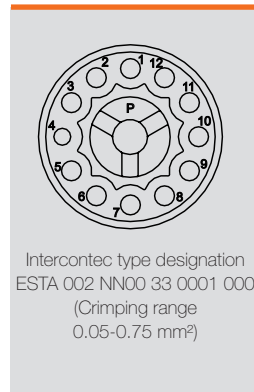
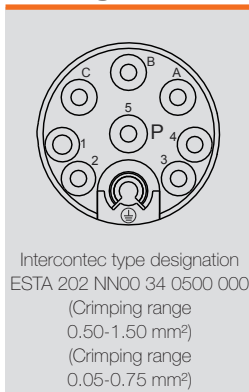
Motor connector



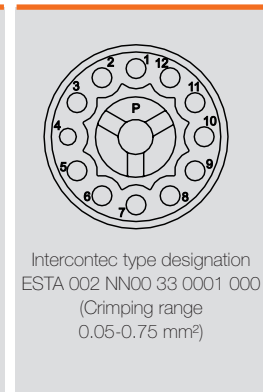
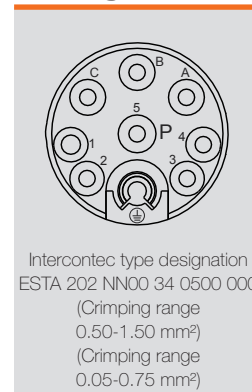
Motor connector



Mating connector



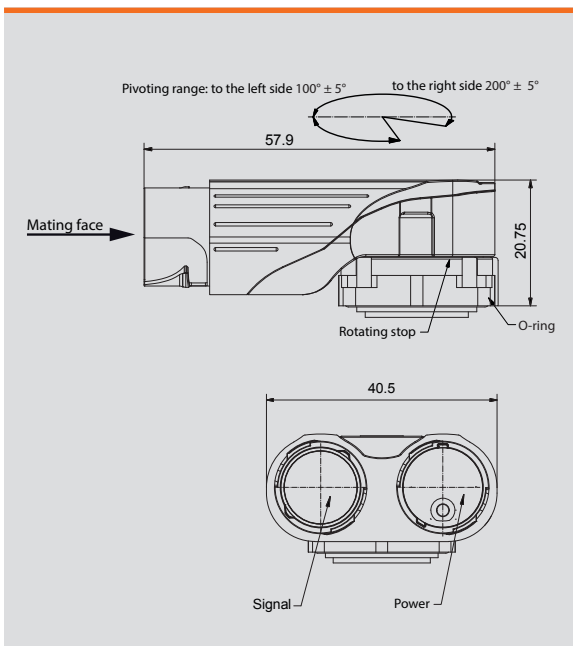
Mating connector



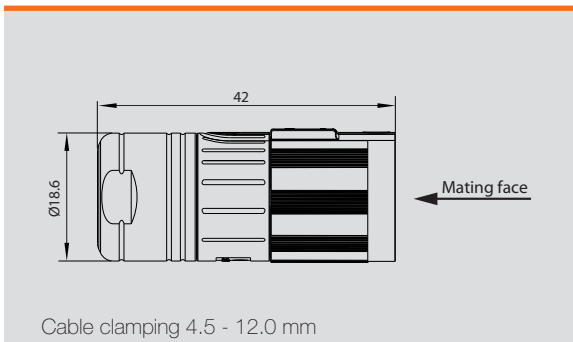


Mating connector with metal gland as shown or with plastic gland.

Motor connector Angled receptacle Y-Tec, rotatable



Mating connector



■ HMDao8 HTE

with attached electronics (24 / 48 V_{DC})



Specifications - motors

Type	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]
HMDao8 - 24 V_{DC}			
HMD08-020	3,000	1.0	2.1
HMD08-020	5,500	0.7	1.4
HMD08-028	3,000	1.2	2.4
HMD08-028	5,500	0.8	1.6
HMD08-035	3,000	1.3	2.6
HMD08-035	5,500	0.9	1.8
HMD08-050	3,000	1.5	3.0
HMD08-050	5,500	1.0	2.0

HMDao8 - 48 V_{DC}

HMD08-020	3,000	1.0	3.5
HMD08-020	5,500	0.6	2.0
HMD08-028	3,000	1.4	3.9
HMD08-028	5,500	0.8	2.3
HMD08-035	3,000	1.8	4.1
HMD08-035	5,500	1.0	2.4
HMD08-050	3,000	2.3	4.5
HMD08-050	5,500	1.2	2.6

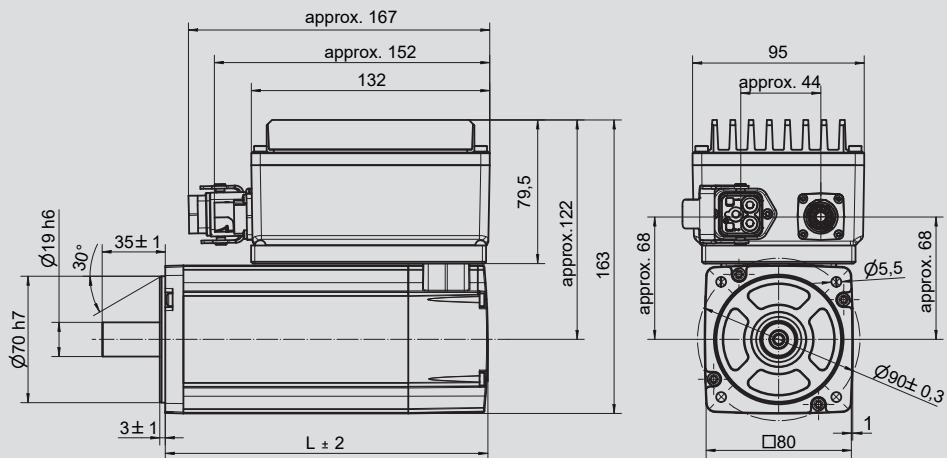
Specifications - motor with attached servo drive

Power supply	Voltage	20 - 30 V _{DC}	43 - 53 V _{DC}
	Current	56 A _{DC} (peak)*	56 A _{DC} (peak)**
Logic supply	Voltage	24 V _{DC}	
Interfaces		CANopen	
Parameter setting software		Heidrive Drive Manager (HeidriveGUI)	
Inputs		1 x brake supply (1 A @ 24 V _{DC}), 2 x digital input (24 V _{DC} , function-bound), 2 x user-defined input possible	
Outputs		2 x custom output possible	
Brake control		internal control, external supply necessary	
Holding brake		optional	
Connectors		I-Tec signal connector, industrial connector	
Encoder system		Singleturn / Multiturn and HIPERFACE	

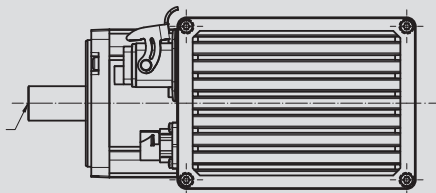
* At 24 V_{DC}

** At 48 V_{DC}

Dimensions HMDa08 HTE



Center bore with axial thread according to DIN 332 - DS M6




Lengths HMDa08 (24 / 48 V _{DC})		L
HMD08-020	without brake	124 mm
HMD08-020	with brake	172 mm
HMD08-028	without brake	139 mm
HMD08-028	with brake	187 mm
HMD08-035	without brake	154 mm
HMD08-035	with brake	202 mm
HMD08-050	without brake	184 mm
HMD08-050	with brake	232 mm

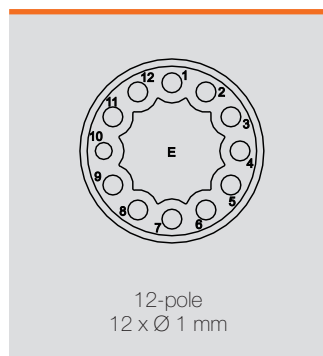
E01

Pin	Function
1	CAN_L
2	CAN_H
3	CAN_GND
4	Brake_SI (+)
5	Brake_SI (-)
6	LOGIC SUPPLY
7	GND
8	Custom-Port A
9	Custom-Port B
10	TD ¹⁾ _GND
11	TD ¹⁾ _Channel A
12	TD ¹⁾ _Channel B

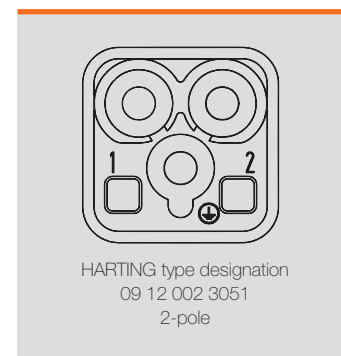
1) TD: Torque Disable

Pin	Function
1	POWER SUPPLY
2	GND
	PE

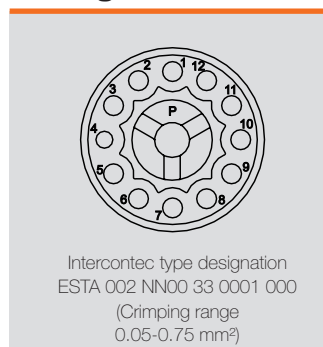
Motor connector



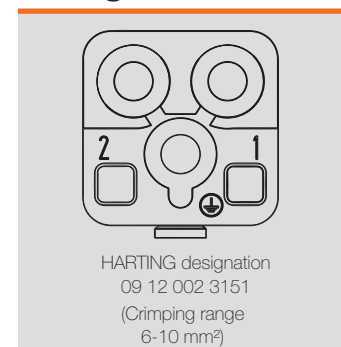
Motor connector



Mating connector



Mating connector



■ HMDio6 HTB with integrated electronics and Safety - STO



Specifications - motors

Type	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]
HMDio6 - 48 V_{DC}			
HMD06-011	6,000	0.4	1.2
HMD06-011	3,000	0.8	2.5
HMD06-019		1.2	3.5
HMD06-026		1.4	4.5

Specifications - motor with integrated servo drive

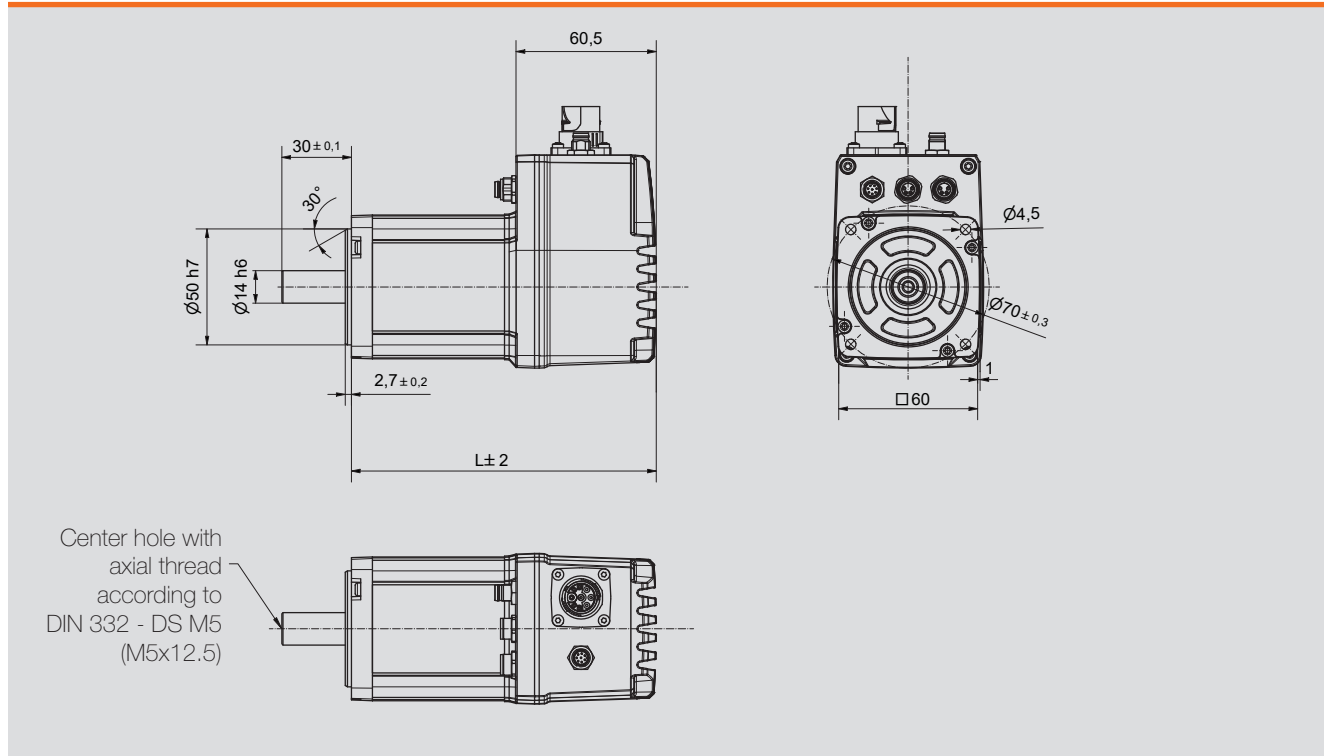
Power supply	Voltage	19 - 72 V _{DC}
	Current	16 A _{DC} / 48 A _{DC} (peak)*
Logic Supply**	Voltage	19 - 48 V _{DC}
Interfaces	CANopen (galvanically isolated) / EtherCAT	
Parameter setting software	DATAM	
Inputs	3x digital input (galvanically isolated) 2x analogue input (± 10 V, differential)	
Outputs (galvanically isolated)	2x digital output (24 V) Safe encoder signals	
Brake control	Integrated / external supply	
Connectors	M8, M12, M23, I-Tec	
Holding brake	optional	
Encoder system	Singleturn / Multiturn	
Safety function	STO***	

* At 48 V_{DC}

** Power and logic supply can be separated or combined (see order code)

*** In certification

Dimensions HMDio6 HTB



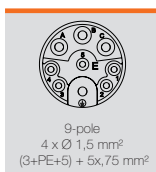
Lengths HMDi06 HTB (Standard Singletum Encoder)

		L
HMD06-011	without brake	136.5 mm
HMD06-011	with brake	175.5 mm
HMD06-019	without brake	161.5 mm
HMD06-019	with brake	200.5 mm
HMD06-026	without brake	191.5 mm
HMD06-026	with brake	230.5 mm

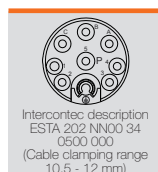
Lengths HMDi06 HTB (Safety Encoder / Multitum Encoder)

		L
HMD06-011	without brake	147 mm
HMD06-011	with brake	186 mm
HMD06-019	without brake	172 mm
HMD06-019	with brake	211 mm
HMD06-026	without brake	202 mm
HMD06-026	with brake	241 mm

Motor connector

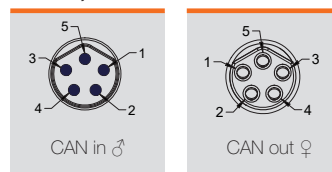


Mating connector



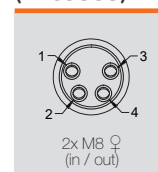
Pinout I-Tec	
PIN	Function
A	Power Supply
B	Power GND
C	FE
Earthing	-
1	Logic Supply*
2	Logic GND*
3	-
4	-
5	-

CANopen (B-coded)



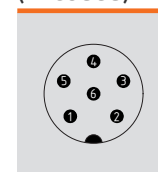
Pinout M8 CANopen	
PIN	Function
1	-
2	GND
3	CAN_H
4	CAN_L
5	CAN_GND

EtherCAT (A-coded)



Pin	Function
1	TX+
2	RX+
3	RX-
4	TX-

M8 Safety (A-coded)



PIN	Function
1	STO1+
2	STO1-
3	STO2+
4	STO2-
5	STOFB
6	STORTN

M8 I/O (A-coded)



PIN	Function
1	AIN1+
2	AIN1-
3	DIN X1
4	DIN X2
5	DIN X3
6	DIN COM
7	DOUTC 1
8	DOUTE 1

■ HMDio8 HTB with integrated electronics and Safety - STO



Specifications - motors

Type	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]
HMDio8 - 48 V_{DC}			
HMD08-024	3,000	1.5	6.0
HMD08-024	5,500	0.8	3.0
HMD08-032	3,000	2.0	8.0
HMD08-032	5,500	1.0	4.0
HMD08-042	3,000	2.3	8.8
HMD08-042	5,500	1.2	4.8
HMD08-057	3,000	2.4	8.8

Specifications - motor with integrated servo drive

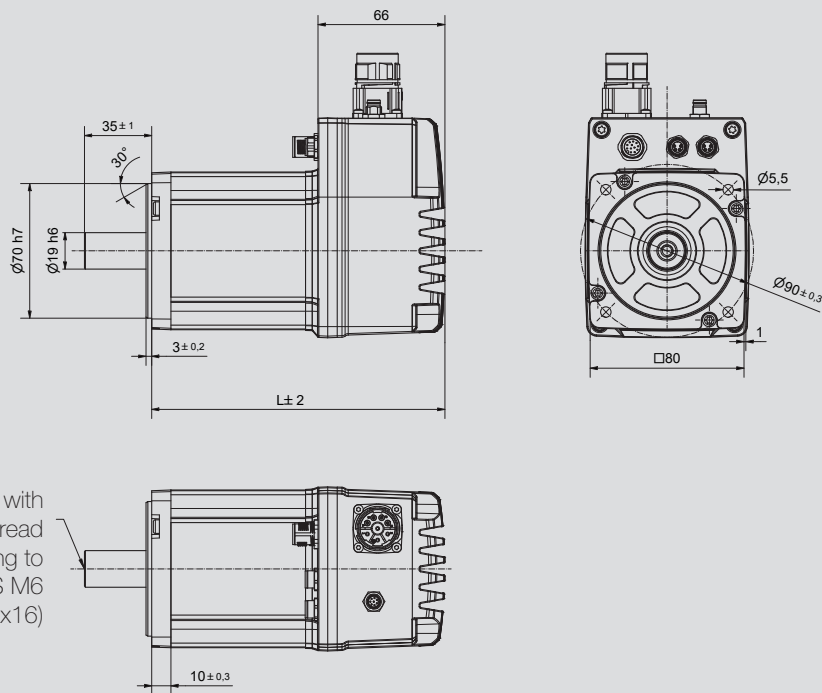
Power supply	Voltage	19 - 72 V _{DC}
	Current	22 A _{DC} / 48 A _{DC} (Peak)*
Logic Supply**	Voltage	19 - 48 V _{DC}
Interfaces	CANopen (galvanically isolated) / EtherCAT	
Parameter setting software	DATAM	
Inputs	3x digital input (galvanically isolated) 2x analogue input (± 10 V, differential)	
Outputs (galvanically isolated)	2x digital output (Optional safe encoder signals)	
Brake controll	Integrated / external supply	
Holding brake	optional	
Connectors	M8, M12, M23	
Encoder system	Singleturn / Multiturn	
Safety function	STO***	

* At 48 V_{DC}

** Power and logic supply can be separated or combined (see order code)

*** In certification

Dimensions HMDi08 HTB



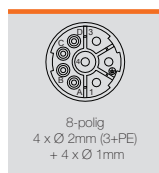
Lengths HMDi08 HTB (Standard Singleturn Encoder)

Model	Configuration	L
HMD08-024	without brake	158.5 mm
HMD08-024	with brake	207 mm
HMD08-032	without brake	173.5 mm
HMD08-032	with brake	222 mm
HMD08-042	without brake	188.5 mm
HMD08-042	with brake	237 mm
HMD08-057	without brake	218.5 mm
HMD08-057	with brake	267 mm

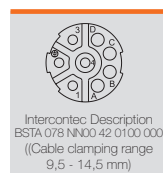
Lengths HMDi08 HTB (Safety Encoder / Multiturn Encoder)

Model	Configuration	L
HMD08-024	without brake	169 mm
HMD08-024	with brake	217.5 mm
HMD08-032	without brake	184 mm
HMD08-032	with brake	232.5 mm
HMD08-042	without brake	199 mm
HMD08-042	with brake	247.5 mm
HMD08-057	without brake	229 mm
HMD08-057	with brake	277.5 mm

Motor connector

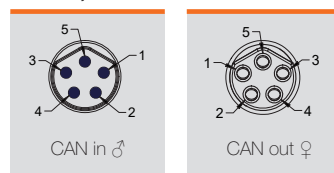


Mating connector



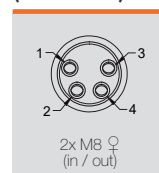
Pinout M23	
PIN	Function
1	Power Supply
2	-
3	Power GND
4	FE
A	Logic Supply*
B	Logic GND*
C	-
D	-

CANopen (B-coded)



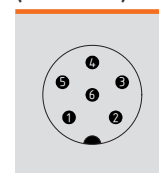
Pinout M8 CANopen	
PIN	Function
1	-
2	GND
3	CAN_H
4	CAN_L
5	CAN_GND

EtherCAT (A-coded)



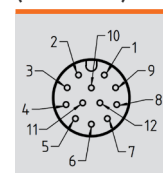
Pin	Function
1	TX+
2	RX+
3	RX-
4	TX-

M8 Safety (A-coded)



PIN	Function
1	STO1+
2	STO1-
3	STO2+
4	STO2-
5	STOFB
6	STORTN

M12 I/O (A-coded)



PIN	Function
1	AIN1+
2	AIN1-
3	AIN2+
4	AIN2-
5	DIN X1
6	DIN X2
7	DIN X3
8	DIN COM
9	COUTC 1
10	DOUTE 1
11	DOUTC 2
12	DOUTE 2

■ HMDio6 HTP

with integrated electronics
and Safety - STO, SBC



Specifications - motors

Type	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]
HMDio6 - 48 V_{DC}			
HMD06-011	3,000	0.75	2.00
HMD06-019		1.12	4.00
HMD06-026		1.32	5.90

Specifications - motor with integrated servo drive

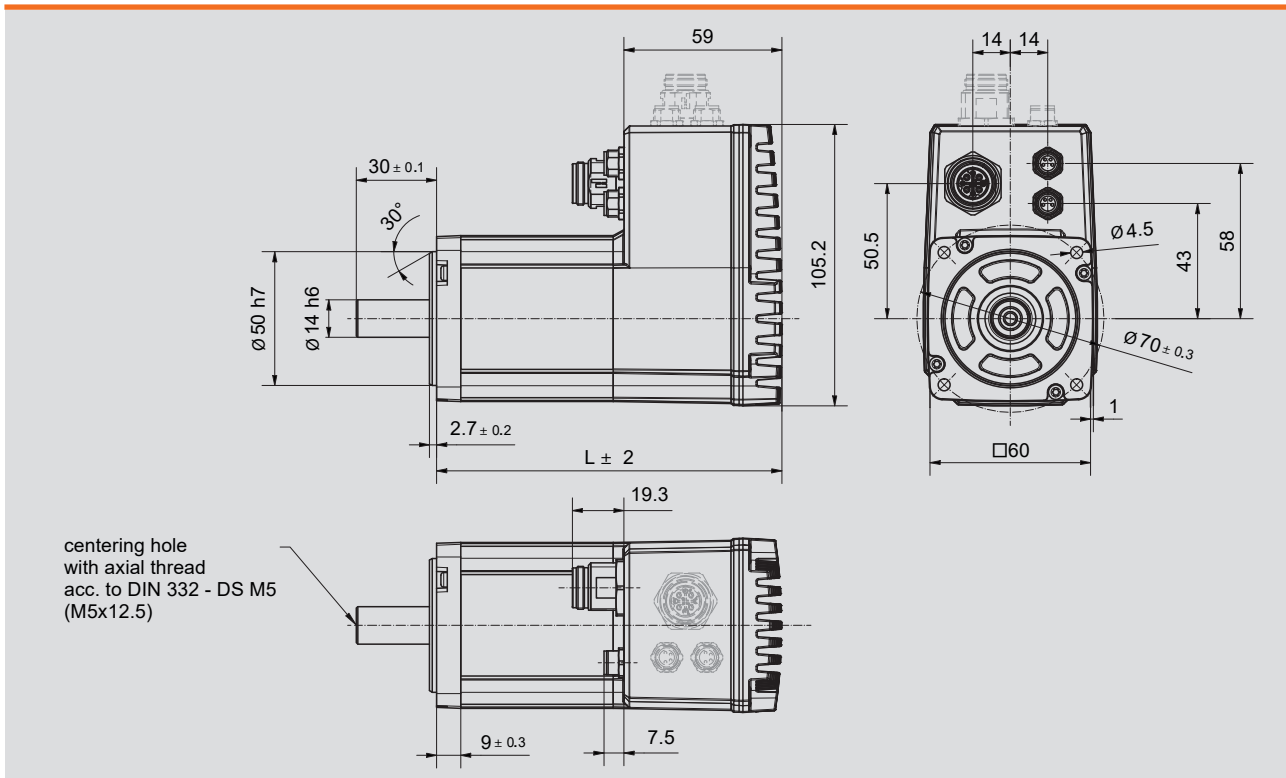
Power supply	Voltage	12 - 48 V _{DC}
	Current	16 A _{DC} / 48 A _{DC} (Peak)*
Interface	EtherCAT	
Parameter setting software	Heidrive Servo Drive Commissioning	
Inputs	1x digital input STO, SBC	
Outputs	-	
Brake control	Integrated (matched to our optionally available brakes)	
Holding brake	optional	
Connectors	M16 (EtherCat M8)	
Encoder system	Singleturn / Multiturn	
Safety function	STO, SBC (SIL 3, Performance Level e, Category 3)	

* At 48 V_{DC}

Lenghts HMDio6 HTP

		L
HMD06-011	without brake	134 mm
HMD06-011	with brake	173 mm
HMD06-019	without brake	159 mm
HMD06-019	with brake	198 mm
HMD06-026	without brake	189 mm
HMD06-026	with brake	228 mm

Dimensions HMDio6 HTP

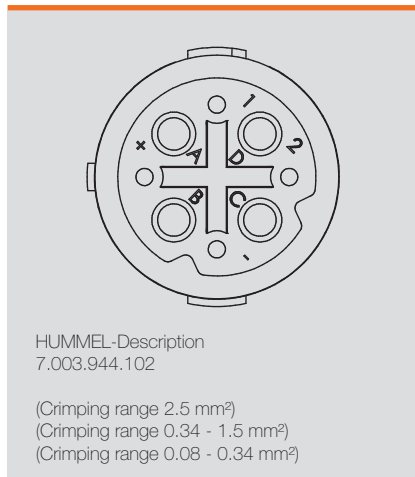


Motor connector

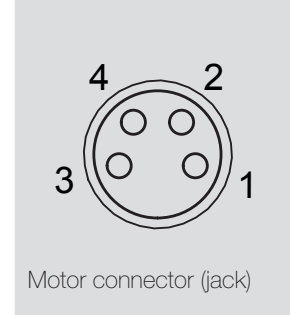


Connection cable (sold separately on request)


Mating connector



EtherCat interface via 2 x M8 (IN/OUT) 4-pole, A-coded



Pin	Function
1	TX+
2	RX+
3	RX-
4	TX-

Pin	Function
A	DI Return
B	48 V
C	GND
	FE
1	DIN
2	STO GND
+	STO 1
-	STO 2

■ HMDio8 HTP

with integrated electronics
and Safety - STO, SBC



Specifications - motor

Type	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]
HMDio8 - 48 V_{DC}			
HMD08-024	3,000	1.25	4.70
HMD08-032		1.85	6.90

Specifications - motor with integrated servo drive

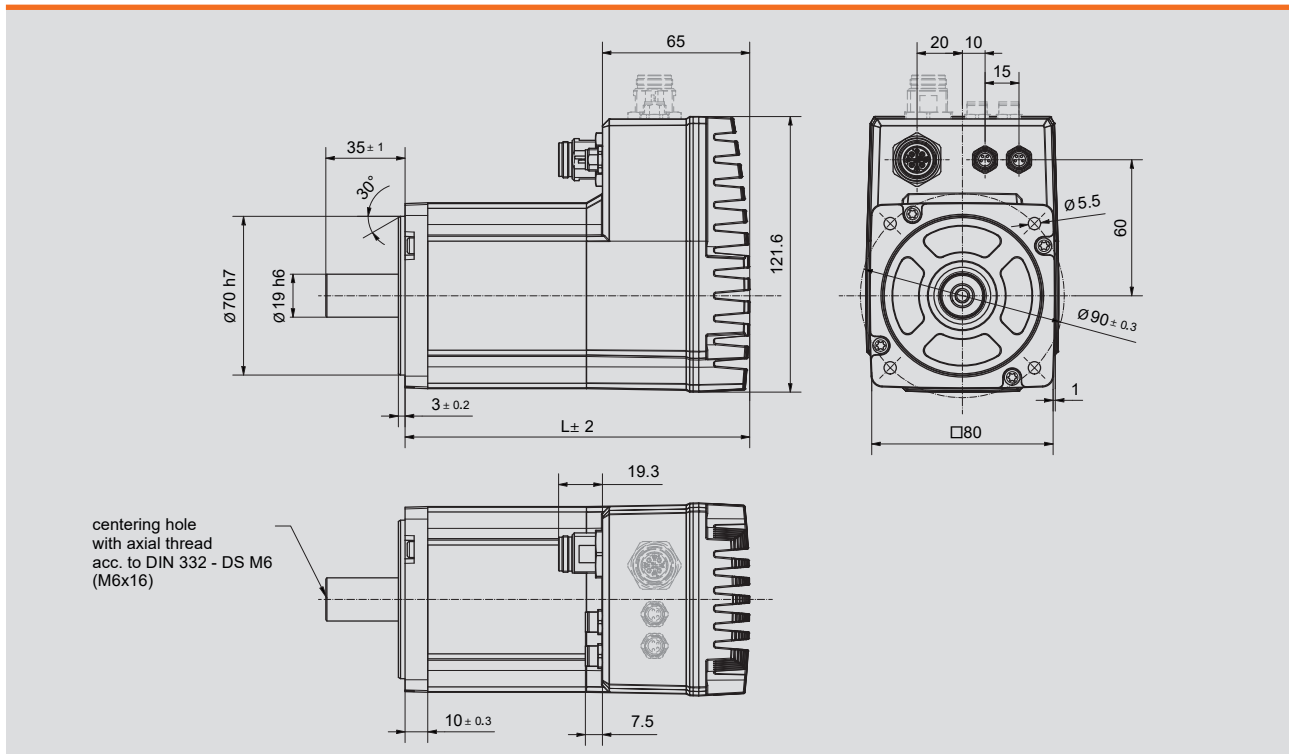
Power supply	Voltage	12 - 48 V _{DC}
	Current	20 A _{DC} / 48 A _{DC} (Peak)*
Interfaces	EtherCAT	
Parameter setting software	Heidrive Servo Drive Commissioning	
Inputs	1x digital input STO, SBC	
Outputs	-	
Brake control	Integrated (matched to our optionally available brakes)	
Holding brake	optional	
Connections	M16 (EtherCAT M8)	
Encoder system	Singleturn / Multiturn	
Safety function	STO, SBC (SIL 3, Performance Level e, Categorie 3)	

* At 48 V_{DC}

Lengths HMDio8 HTP

		L
HMD08-024	without brake	158 mm
HMD08-024	with brake	206 mm
HMD08-032	without brake	173 mm
HMD08-032	with brake	221 mm

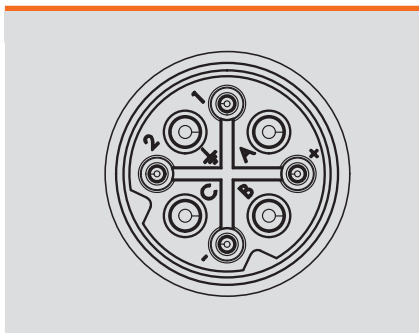
Dimensions HMDio8 HTP



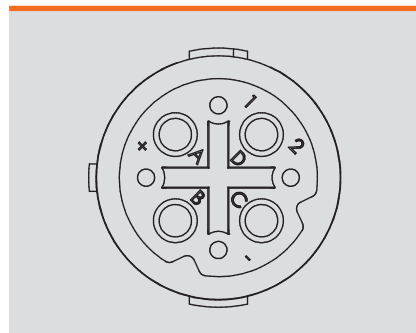
Connection cable
(sold separately on
request)

EtherCat interface
via 2 x M8
(IN/OUT) 4-pole,
A-coded

Motor connector

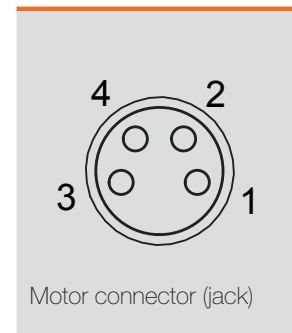


Mating connector



HUMMEL-Description
7.003.944.102

(Crimping range 2.5 mm²)
(Crimping range 0.34 - 1.5 mm²)
(Crimping range 0.08 - 0.34 mm²)



Pin	Function
1	TX+
2	RX+
3	RX-
4	TX-

Pin	Function
A	DI Return
B	48 V
C	GND
FE	FE
1	DIN
2	STO GND
+	STO 1
-	STO 2

■ **HMPao8 HTP**
 with attached electronics (230 V_{DC})
 and Safety - STO



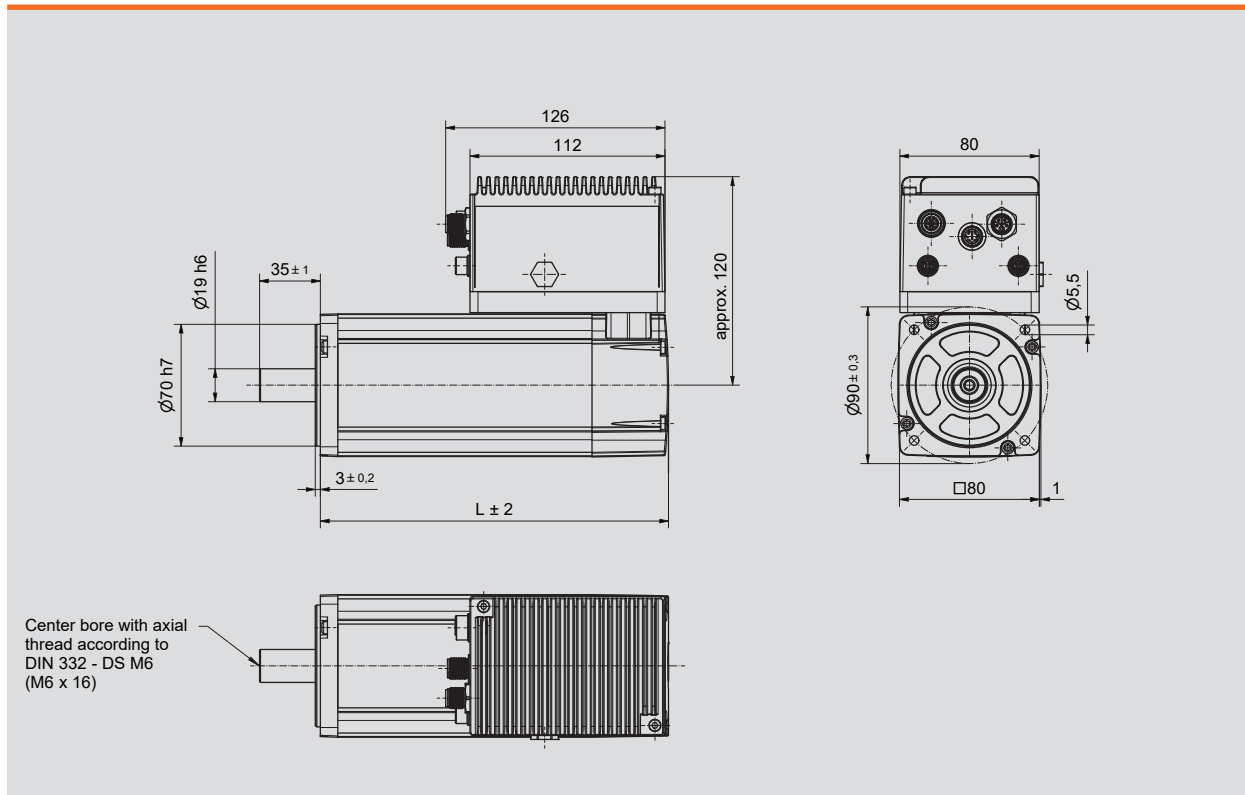
Specifications - motors

Type	Rated speed n_n [rpm]	Rated torque M_n [Nm]	Peak torque M_{max} [Nm]
HMPao8 - 230 V_{AC}			
HMP08-028	3,000	1.42	10.0

Specifications - motor with attached servo drive

Power supply	Voltage	230 V _{AC} [± 10 %]
	Current	6 A _{rms}
Logic supply	Voltage	24 V _{DC}
Interfaces	EtherCAT / PROFINET, CANopen	
Parameter setting software	Heidrive ServoCommander	
Inputs	1 x analog input (±10 V, differential) 8 x digital input (24 V, configurable)	
Outputs	2 x digital output (24V _{DC}), 1 x analog output (+-10V, differential)	
Brake control	integrated	
Holding brake	optional	
Connectors	M8, M12	
Encoder system	Singleturn / Multiturn	
Safety function	STO (SIL 3, Performance Level e, Category 4)	

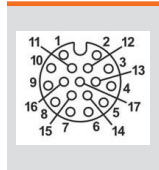
Dimensions HMPa08 HTP



Lengths HMPa08 (230 V_{AC})

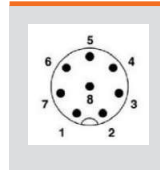
		L
HMP08-028	without brake	158 mm
HMP08-028	with brake	200 mm

I/O M12, 12-pin, A-encoded



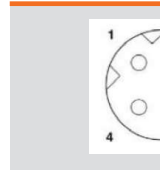
PIN*	Function
1	DIN0
2	DIN1
3	DIN2
4	DIN3
5	DIN4
6	DIN5
7	DIN8
8	DOUT0
9	DOUT1
10	AOUT
16	AIN
17	GND

Logic and STO M12, 8-pin, A-encoded



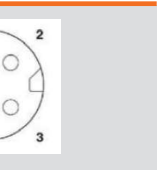
PIN	Function
1	STOA
2	GNDA
3	STOB
4	GNDB
5	DIN6
6	DIN7
7	24 V
8	GND

CANopen M8, 4-pin, D-encoded



PIN	Function
1	CAN_H
2	CAN_GND
3	CAN_L
4	CAN_GND

EtherCAT/ PROFINET M8, 4-pin, D-encoded



PIN	Function
1	TD+
2	RD+
3	TD-
4	RD-

Connector power supply M12, 5-pin, K-encoded



PIN	Function
1	L
2	N
3	ZK+
4	ZK-
5	PE

*Pin 11-15 optionally assignable.

■ Option Planetary gear direct mounting

Possible motor-gearbox combinations



Motors with **E-gears** (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-gears** (Powerful economy)
Economical gear units
Higher radial and axial forces



Motors with **H-gears** (Heavy duty)
Highest radial and axial forces



Motors with **F-gears** (Flange output)
Economical flange gearbox
Output flange according to DIN ISO 9409
High tilting rigidity



Motors with **V-gears** (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 gear unit in modular system, can be combined with motor and standard planetary gear unit

For more information see HMD Planetary Gear catalog or flyer angular gearboxes.

Specifications subject to change! Last changes 11/2023

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