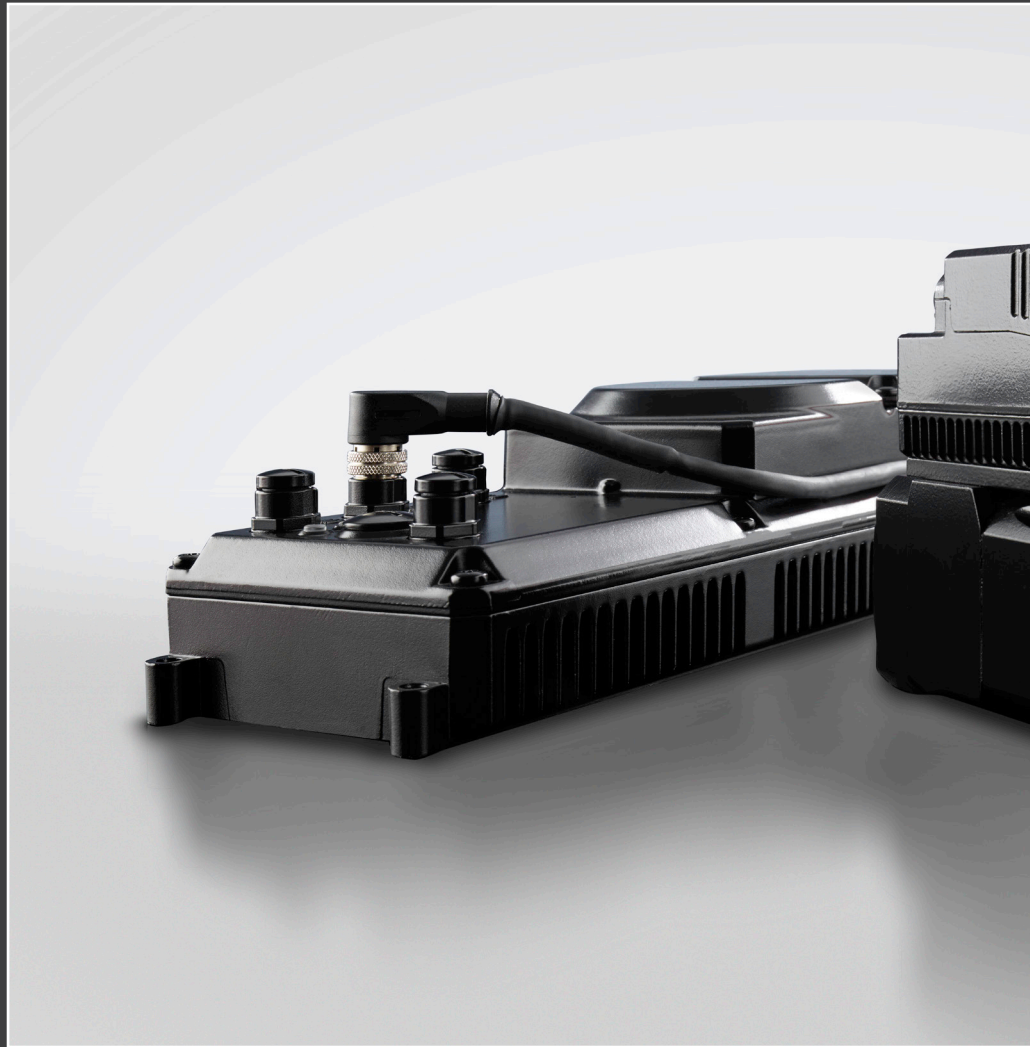


AMKASmart ihXT

Decentralised drive technology
with intelligent cabling

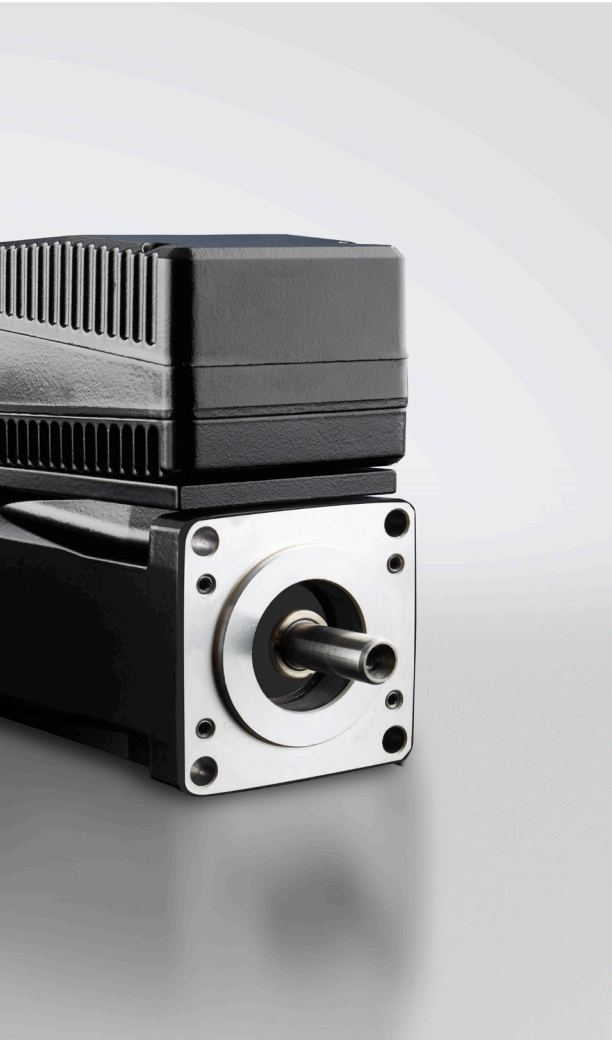


SMART



ADVANTAGES

- Decentralised mounting in the machine
- Easy cabling
- Hybrid cable
- Protection class: IP54 optional IP65
- Up to 90% savings in cable costs
- Reduction of connector costs



AMKSMART ihXT

Decentralised - Intelligent - Efficient

The newly developed ihXT series extends the AMKSMART decentralised product family with a comprehensive servo drive in the power range from 150 to 450 watts. These drives have everything that is required for precise servo control. AMKmotion consistently focused on the most essential aspects during product development.

In terms of function, the ihXT is a combination of synchronous servo motor and servo inverter. The decentralised ihXT servo drives are equipped with hybrid cables to make installation as easy and space-saving as possible. Featuring convenient loop-through options: Forwarded via DC bus together with real-time Ethernet communication via the hybrid cable from one drive to the other. This allows up to 40 axes to be connected in series on one line.

The benefits are significant: Compact dimensions, the elimination of expensive plugs and an installation requirement cut in half thanks to hybrid cables, allow for a saving of up to 90% on cable costs. Using the intelligent plug-in terminal connection in IP65, the plug costs can also be reduced by a further two-thirds.

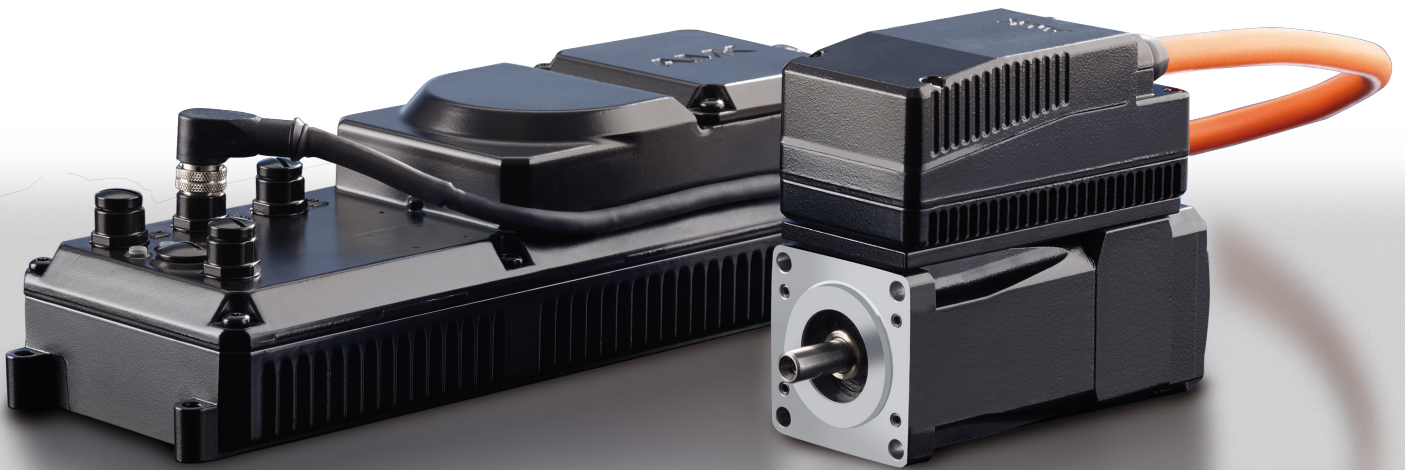
As a result, energy efficiency, fast commissioning and low installation costs are effectively and efficiently combined.

ihXT connection technology

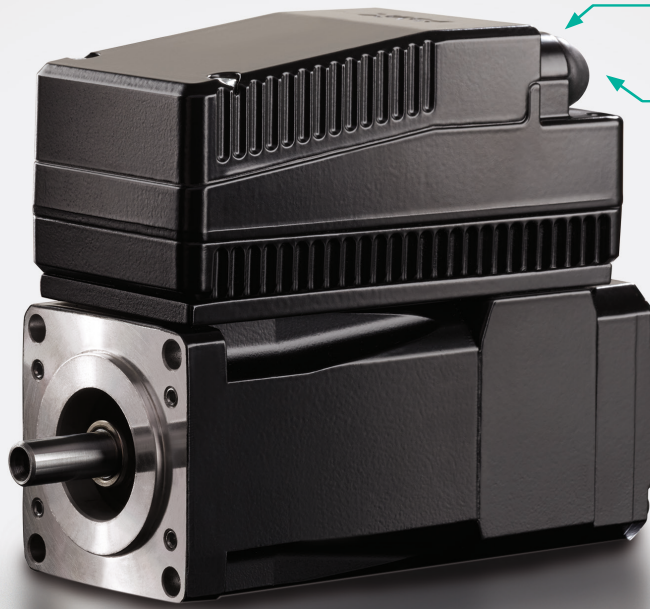
Simply smart:
Plug-in terminal connection from AMKmotion

AMKmotion has developed an intelligent connection system with plug-in terminals to ensure that savings made when using the ihXT are not used to pay for expensive connectors elsewhere. This not only makes the cabling significantly more economical, but also saves space. Since the system connectors in

this power range often account for around one third of the costs of the overall drive, it is possible to make significant savings when using the connection technology from AMKmotion. IP65 protection is, of course, guaranteed.



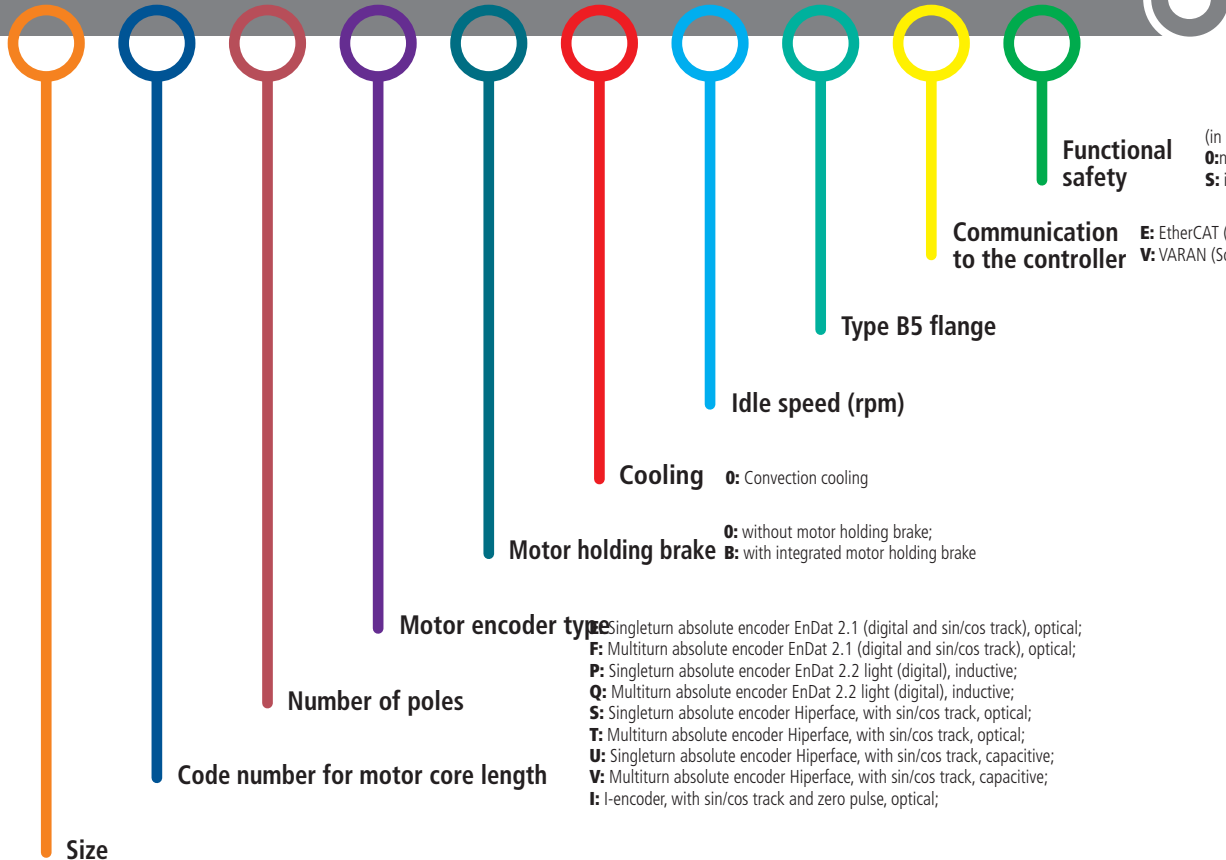
Interfaces



- Forwarding DC link
- Forwarding supply voltage 24 VDC
- Electronics and motor brake, STO
- Power connection DC link
- Supply voltage 24 VDC:
- Electronics and motor brake, STO

Type code

ihXT 3 X X X X 0 XXXX XX X X



Functional safety (in progress)
0: not integrated;
S: integrated

Communication to the controller **E**: EtherCAT (SoE); **C**: CAN (DS402);
V: VARAN (SoV); **S**: SERCOS III

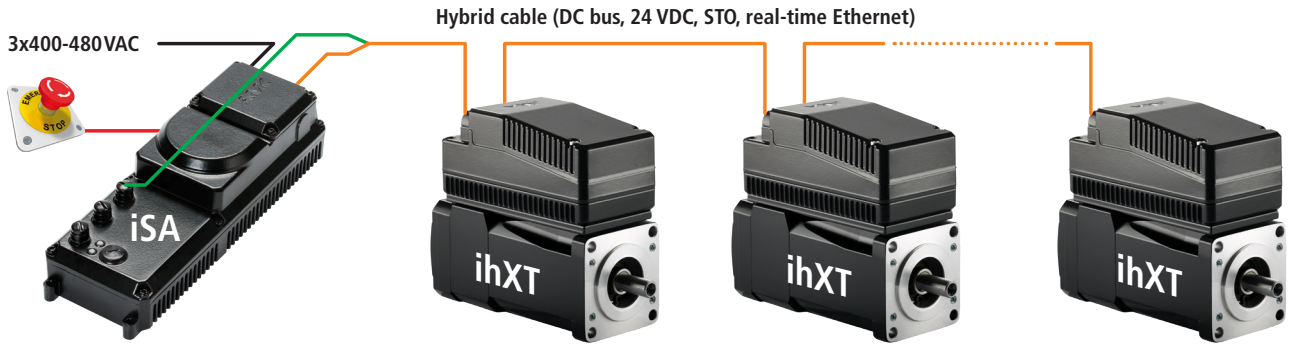
Motor encoder type
P: Singleturn absolute encoder EnDat 2.1 (digital and sin/cos track), optical;
F: Multiturn absolute encoder EnDat 2.1 (digital and sin/cos track), optical;
Q: Multiturn absolute encoder EnDat 2.2 light (digital), inductive;
S: Singleturn absolute encoder Hiperface, with sin/cos track, optical;
T: Multiturn absolute encoder Hiperface, with sin/cos track, optical;
U: Singleturn absolute encoder Hiperface, with sin/cos track, capacitive;
V: Multiturn absolute encoder Hiperface, with sin/cos track, capacitive;
I: I-encoder, with sin/cos track and zero pulse, optical;

AMKSMART ihXT

Decentralised drive solution with and without control cabinet

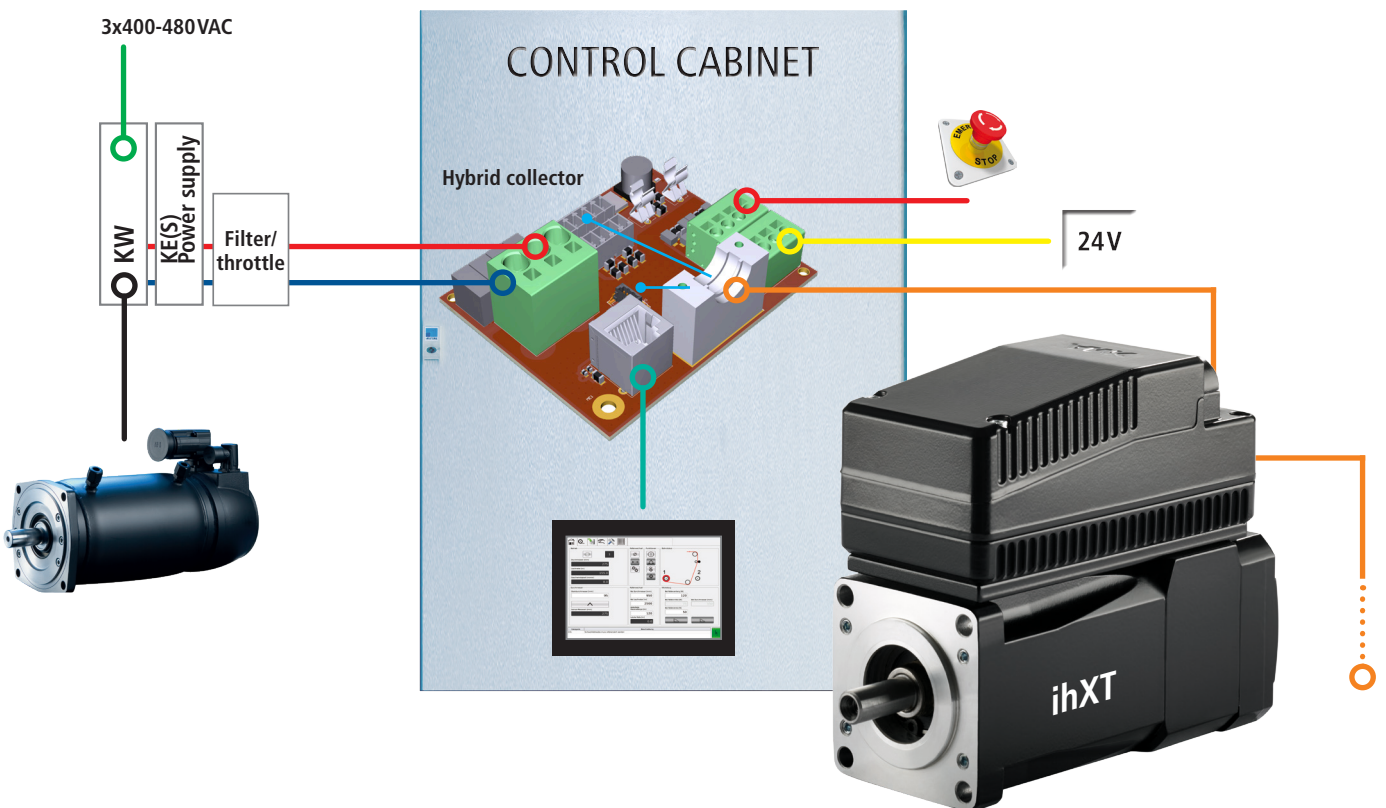
Automation without control cabinet

This example shows an entirely decentralised automation solution. Power is supplied via the iSA decentralised controller which integrates a 24 V supply and DC power supply. As a result, automation without a control cabinet is possible.



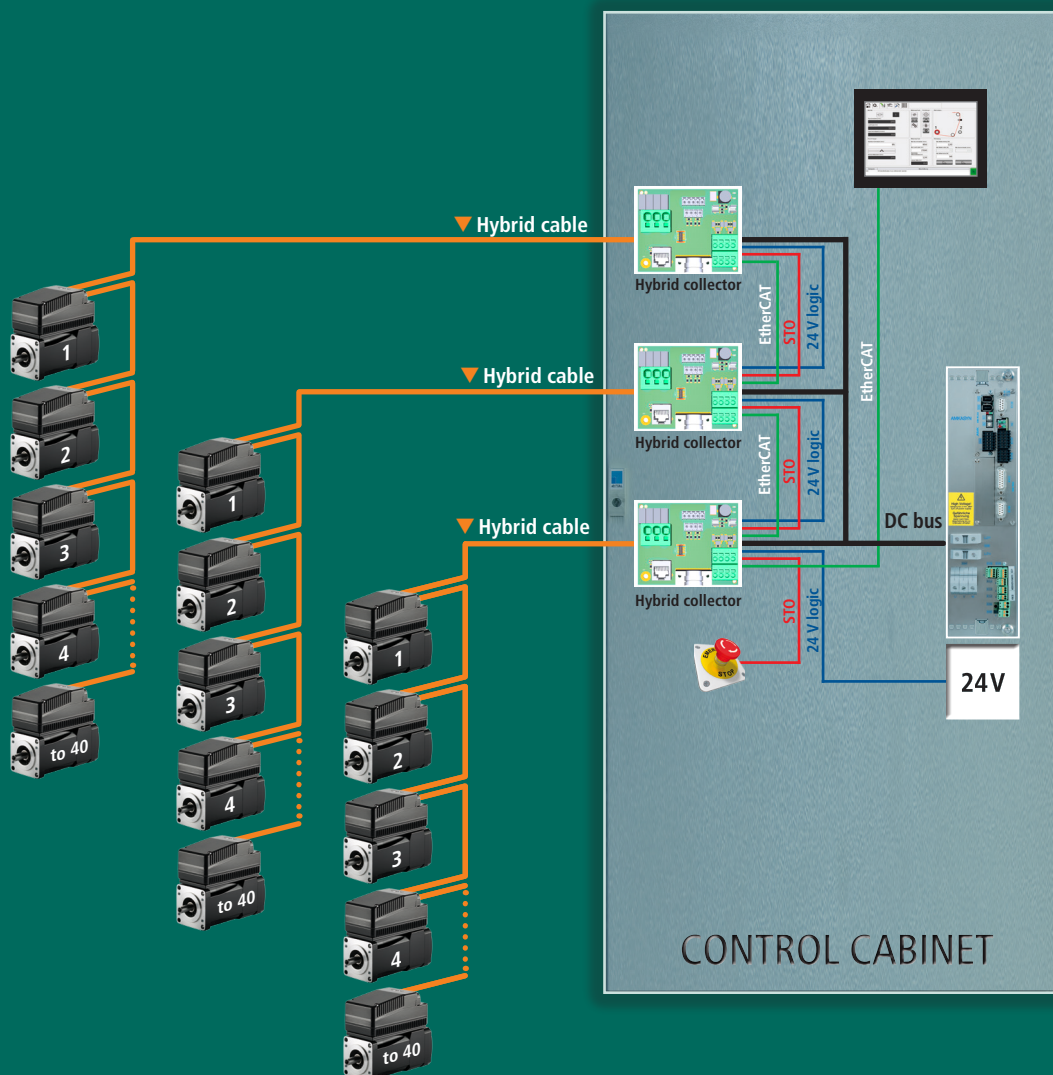
Power supply unit in the control cabinet

The installation of the ihXT drives is decentralised. The hybrid cable is connected to the power supply unit in the control cabinet (as shown here) and looped from ihXT to ihXT.



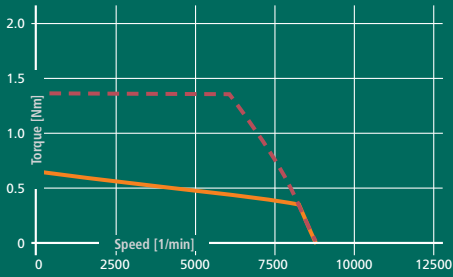
Decentralised in the system network

Star wiring of individual drives from the control cabinet is now a thing of the past. As the figure illustrates, up to 40 ihXTs can be connected in series on one line in larger machines and systems. The potential for savings in the area of cabling is then quite clear. Up to 90% of the cabling costs can be saved here, depending on the application.



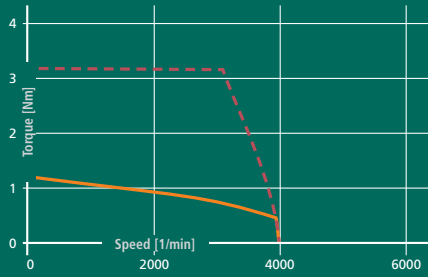
AMKSMART ihXT3

Characteristic curves

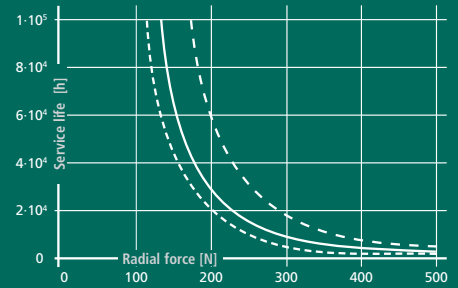


ihXT 3-0,5

--- Maximum moment Continuous thermal moment



ihXT 3-1



Bearing service life (L10h) Characteristic curve

Bearing service life: --- $2 \times n_N$ — n_N - · - $0.5 \times n_N$

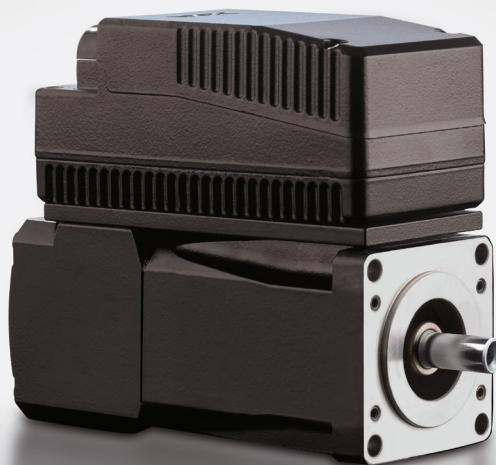
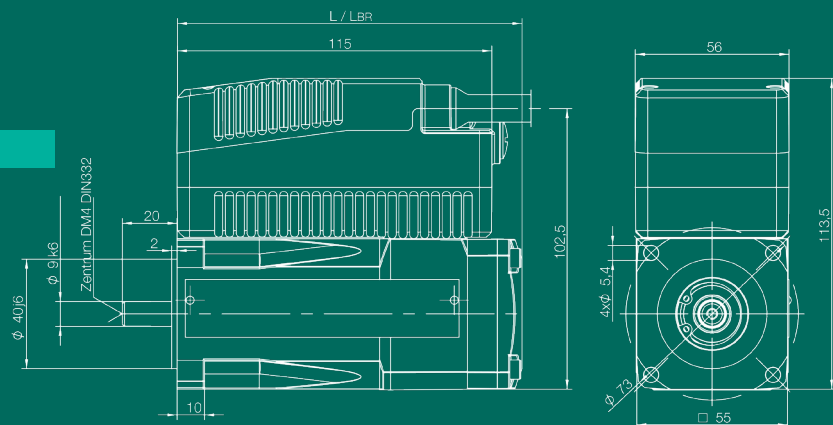
Technical data

Motor type	M_{max} [Nm]	I_{max} [Arms]	M_O [Nm]	I_O [Arms]	M_N [Nm]	I_N [Arms]	n_N [1/min]	P_N [W]	J [kgcm ²]	L [mm]	L_{BR} [mm]	m [kg]	m_{BR} [kg]
ihXT3-0.5-10-xxO	1.39	2.28	0.64	1.0	0.44	0.77	6 000	280	0.09	126	156	1.6	1.9
ihXT3-1-10-xxO	3.1	2.28	1.18	0.9	0.74	0.59	3 000	230	0.27	186	216	2.4	2.7

Explanation of parameters: M_{max} Maximum torque · I_{max} Maximum current · M_O Continuous stall torque · I_O Continuous stall current · M_N Rated torque · I_N Rated current · n_N Rated speed · P_N Rated power · J Motor moment of inertia · L Motor length · L_{BR} Motor length with brake · m Weight · m_{BR} Weight with brake

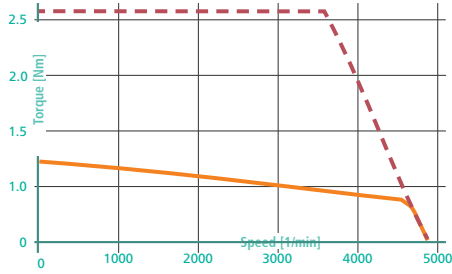
Dimensions

ihXT3 convection-cooled

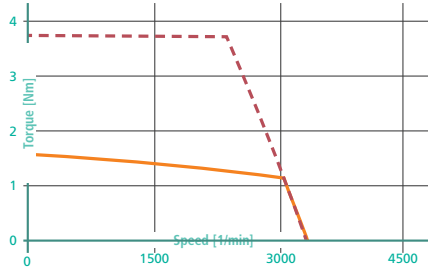


AMKSMART ihXT4

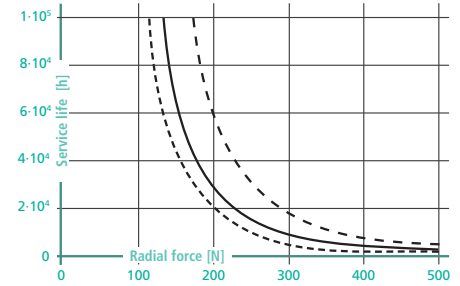
Characteristic curves



ihXT 4-1



ihXT 4-2



Bearing service life (L10h) Characteristic curve

--- Maximum moment Continuous thermal moment

Bearing service life: --- $2 \times n_N$ — n_N - · - $0.5 \times n_N$

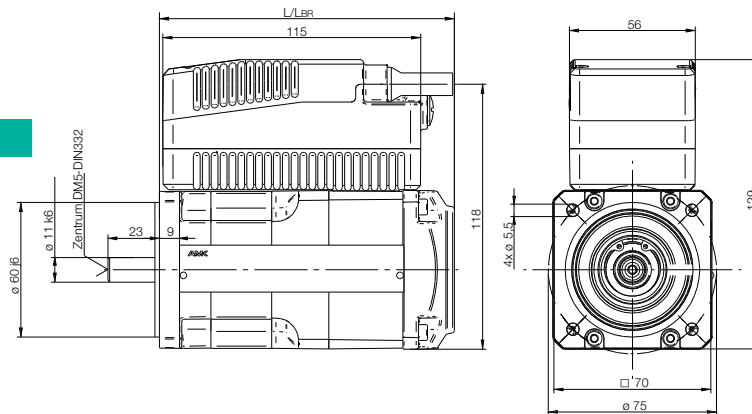
Technical data

Motor type	M_{max} [Nm]	I_{max} [A rms]	M_O [Nm]	I_O [A rms]	M_N [Nm]	I_N [A rms]	n_N [1/min]	P_N [W]	J [kgcm ²]	L [mm]	L_{BR} [mm]	m [kg]	m_{BR} [kg]
ihXT4-1-10-xxO	2.6	2.28	1.19	1.1	0.93	0.86	4000	390	0.32	132	165	2.1	2.4
ihXT4-2-10-xxO	3.7	2.28	1.65	1.0	1.25	0.82	3000	390	0.71	163	196	2.6	3.0

Explanation of parameters: M_{max} Maximum torque · I_{max} Maximum current · M_O Continuous stall torque · I_O Continuous stall current · M_N Rated torque · I_N Rated current · n_N Rated speed · P_N Rated power · J Motor moment of inertia · L Motor length · L_{BR} Motor length with brake · m Weight · m_{BR} Weight with brake

Dimensions

ihXT4 convection-cooled



Safety

Integrated, functional, safe

Machines and plants can pose potential risks to people, the environment and property as a result of dangerous failures and malfunctions. Consequently, it must be ensured that plants and machines can be operated safely. With AMKASmart decentralised drive technology, the STO function can be implemented as standard in PL d in accordance with EN ISO 13849-1.

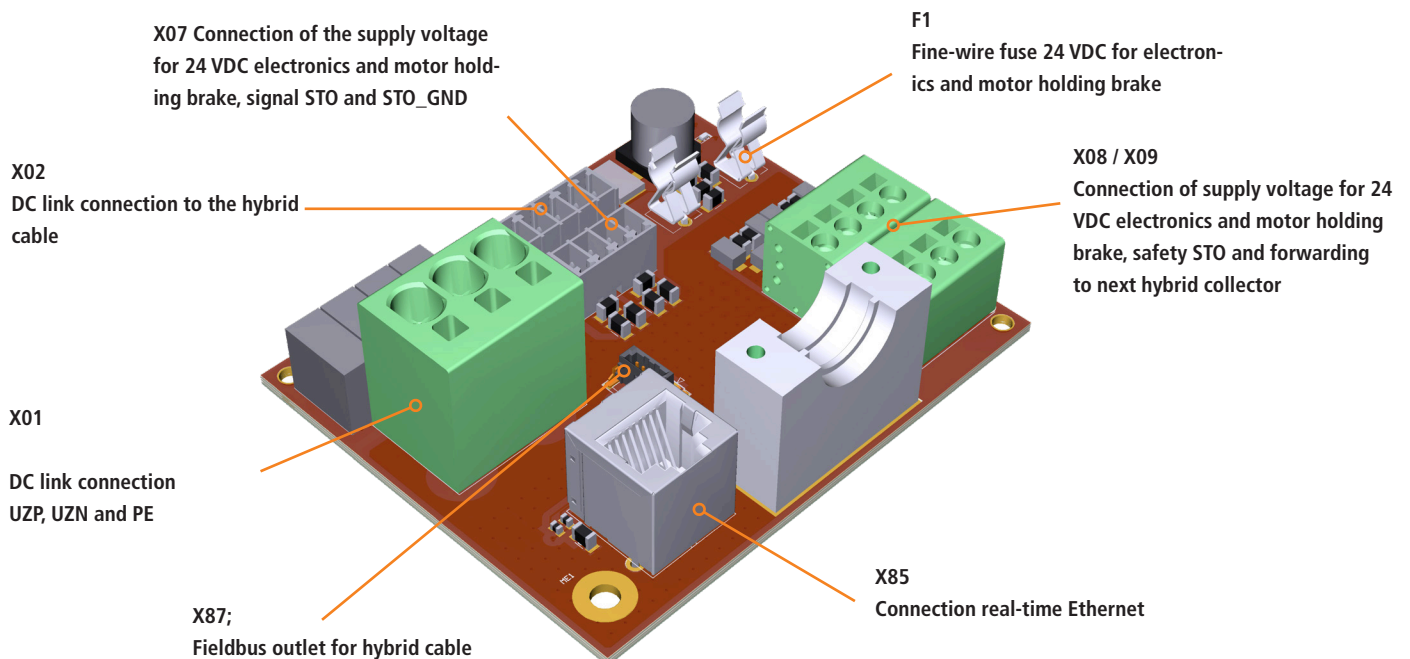
STO (Safe Torque Off)



Interfaces and connections

Hybrid collector

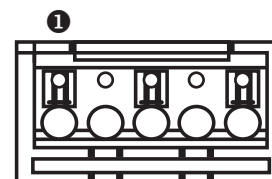
The hybrid collector is the interface between the central control cabinet system and the decentralised drives. The DC link, 24V supply, STO and real-time Ethernet are fed in on the top-hat rail module and then connected to the hybrid cable connectors of the decentralised drives.



Interfaces	Function
X01	Connection of DC link UZP, UZN and PE
X08/X09	Connection of supply voltage for 24 VDC electronics and motor holding brake, safety STO and forwarding to next hybrid collector
X85/X86	Connection real-time Ethernet and forwarding to the next hybrid collector
S1	Bus termination
X02	Connection DC link to the hybrid cable (part no. 47774) to supply the drive
X07	Connection of the supply voltage for 24 VDC electronics and motor holding brake, signal STO and STO_GND to the hybrid cable. (part no. 47774) to supply the drive
X87	Connection real-time Ethernet IN/OUT to the hybrid cable (part no. 47774) to supply the drive
F1	Fine-wire fuse 24 VDC for electronics and motor holding brake
F2	Resettable thermal fuse 24 VDC for signal STO
LED STO & 24 V	LEDs for status indication

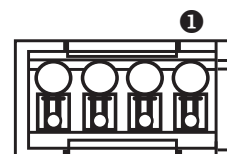
Power connection ihXT (DC link)

PIN	Signal	Meaning
1	UZN	DC link power supply -
2	-	
3	PE	Protective earth
4	-	
5	UZP	DC link power supply +



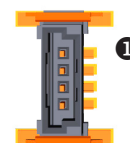
Supply voltage ihXT (24VDC and STO)

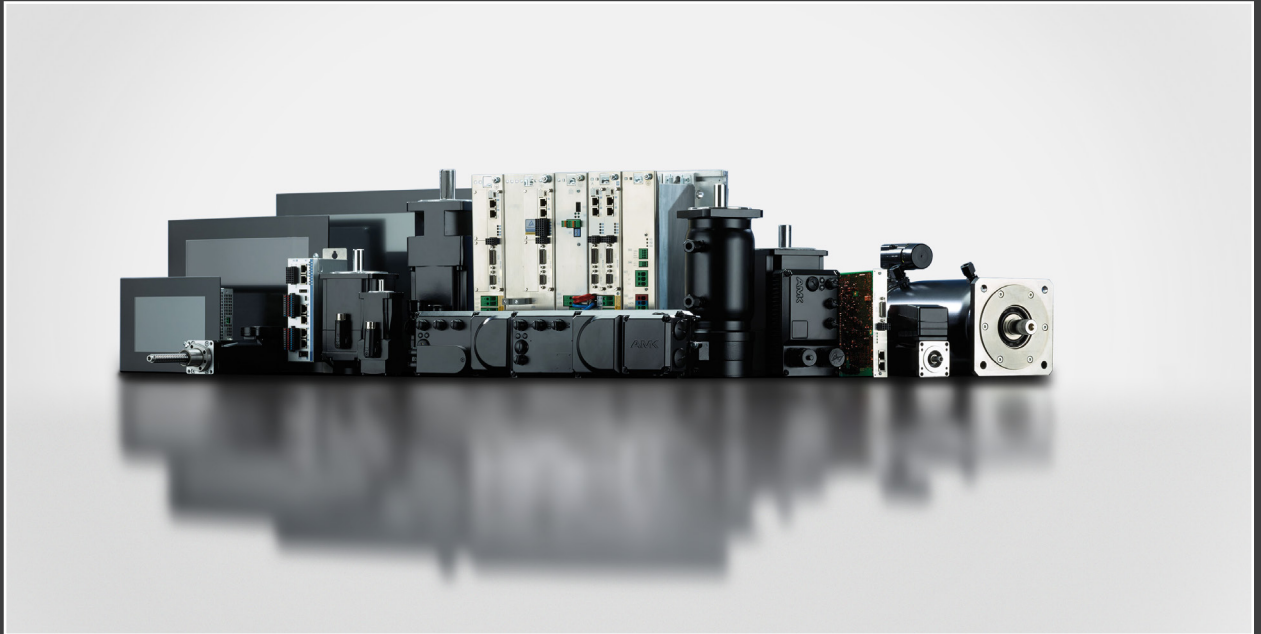
PIN	Signal	Meaning
1	24VDC	Supply voltage 24 VDC Motor holding brake
2	0VDC	Reference potential for 24 VDC
3	STO	STO (Safe torque off)
4	STO_GDN	Reference potential for STO



Real-time Ethernet connection ihXT (contact assignment)

PIN	Signal	Meaning
1	TX+	Transmission Data +
2	TX-	Transmission Data -
3	RX+	Receive Data +
4	RX-	Receive Data -





- **AMKAMAC**
Control technology
- **AMKASMART**
Decentralised
drive technology
- **AMKASYN**
Servo inverter
- **DYNASYN**
Servo motors
- **SPINDASYN**
Linear drives

The information in this brochure is intended solely as a series product description. Deviations are possible due to specific products and continuous further developments. Before using data for calculations or designs, please check in advance the latest status and request product-specific dimension and data sheets.

We reserve the right to make technical changes. 10/2022

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