

One cable solution

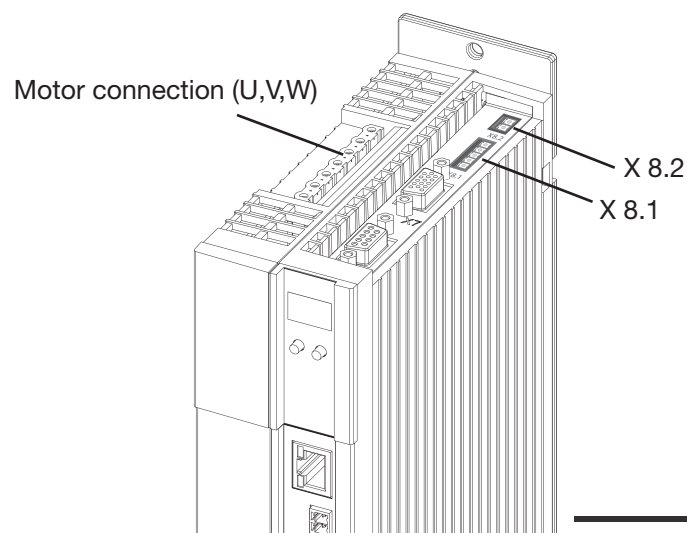
HIPERFACE[®]
DSL

Description

This technology option enables to interpret data of encoder systems according to the HIPERFACE-DSL[®] protocol. The two-wire encoder line can be integrated directly into the motor cable. A motor temperature sensor is connected to the encoder inside the motor and its data is interpreted by it. Likewise, data is transferred via the encoder interface. Hence, a one cable motor system is realized. When using a motor brake, it is directly connected to the one cable interface (X8.1 and X8.2).

HIPERFACE-DSL[®] is a purely digital protocol that gets along with a minimum of connecting cables between servo controller and motor feedback system. The robustness of the protocol enables the connection to the motor feedback system via the motor connection cable. Motor feedback systems with HIPERFACE-DSL[®] interface can be used within all power ranges and considerably simplifies the implementation of an encoder system in the drive:

- uniform digital interface (RS485)
- Analog components for the encoder interface are no longer necessary
- standardized interface between frequency converter application and protocol logic



Technical data

Encoder interface (X8.1)

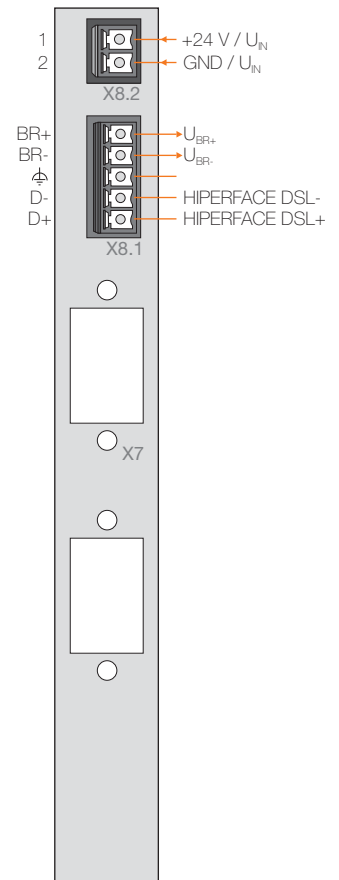
Protocol	HIPERFACE DSL two-wire interface
Maximum current	150 mA
Motor temperature sensor	is connected and evaluated within the encoder
Interface	RS 485

Connection motor brake (X8.1 / X8.2)

Output voltage U_{BR} (X8.1)	+24 V DC (typ. $U_{BR} = U_{IN} - 1.4$ V)
Maximum output current	2.0 A
Voltage supply U_{IN} (X8.2)	+24 V DC (external power supply necessary)
Specification (X8.1)	short-circuit proof
	integrated overload protection, overcurrent causes cyclical shutdown
	activatable line break monitoring, $I < 200$ mA typically in status „1“
	Functionality like standard motor brake connection (X13)
	Usable also as configurable digital output
Connection to the motor is available within the pre-assembled encoder/ motor cable.	

NOTE: Maximum cable length < 30m

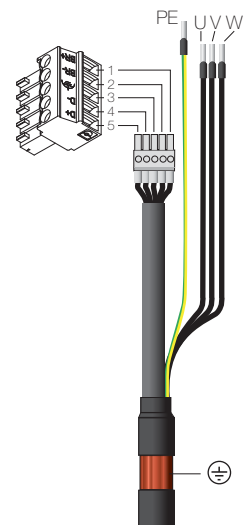
NOTE: For brakes with higher power need (> 2A) a relay/ contactor must be installed upstream.



For connection to the one cable interface the servo motors of the HMP series with adequate encoders and motor brakes are applicable. The associated motor cable is pre-assembled and specified according to the following table.

Pre-assembled motor/ encoder cable

Name	Legend	Cross section
1 = BR+	Connection motor brake	2 x 0.75 mm ²
2 = BR-		
3 = ⊕	Shield connection control side	1 mm ²
4 = D-	HIPERFACE DSL connection	2 x AWG22
5 = D+		
PE	Protective conductor	1 mm ²
U	Motor phase	1 mm ²
V	Motor phase	1 mm ²
W	Motor phase	1 mm ²
⊕	Cable outer shield	contact laminarly



NOTE:
At motor side the motor/ encoder cable is equipped with a special connector (9-pole connector) appropriate to the HMP motors. Precise details you will find in the order catalog of HMP servo motors.

■ Connection technology

Connector I-Tec

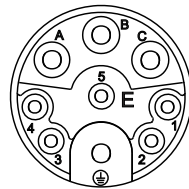


Technical data:

- Connection Speedtec IP66/67
- Cable clamping range: 10.5 - 12 mm
- for currents $< 14 A_{eff}$
- Rotatable from $+100^\circ$ to -200°
- 9-pole, 9 x 1 mm
- max. 1.5mm^2 cable cross section

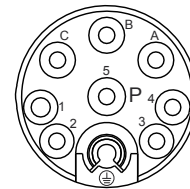
Assignm.	Function
A	U
B	V
C	W
Grounding	PE
1	U_s (DSL +)
2	GND (DSL -)
3	Brake +*
4	Brake -*
5	-

Motor connector



Power connector, 9-pole
9 x \varnothing 1 mm (3+PE+5)

Mating connector



Intercontec type designation
ESTA 202 NN00 34 0500 000
(Cable clamping range 10.5-12 mm)

Connector M23

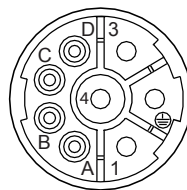


Technical data:

- Connection Speedtec or screw connection electively IP66/67
- Cable clamping range 9.5 - 14.5 mm
- for currents $> 12 A_{eff}$ to $30 A_{eff}$
- Rotatable from $+100^\circ$ to -230°
- 8-pole, 4 x 2mm und 4 x 1mm
- max. 2.5mm^2 cable cross section

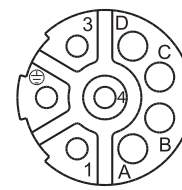
Assignm.	Function
A	Brake +*
B	Brake -*
C	U_s (DSL+)
D	GND (DSL-)
1	U
4	V
3	W
Grounding	PE

Motor connector



8-pole
4 x \varnothing 2mm (3+PE) + 4 x \varnothing 1mm

Mating connector



Intercontec type designation
BSTA 078 NN00 42 0100 000
(Cable clamping range 9.5-14.5 mm)

* if available

■ DSL-capable encoders and controllers

Optical encoder systems

EKS/EKM36

(Single- / multi-turn encoder)



Technical data:

- Absolute position with a resolution of 262,144 steps per rotation
- Programming of the position value
- Measuring of 4,096 rotations (only for EKM36, multi-turn encoder)
- Electronic type plate

Servo controller

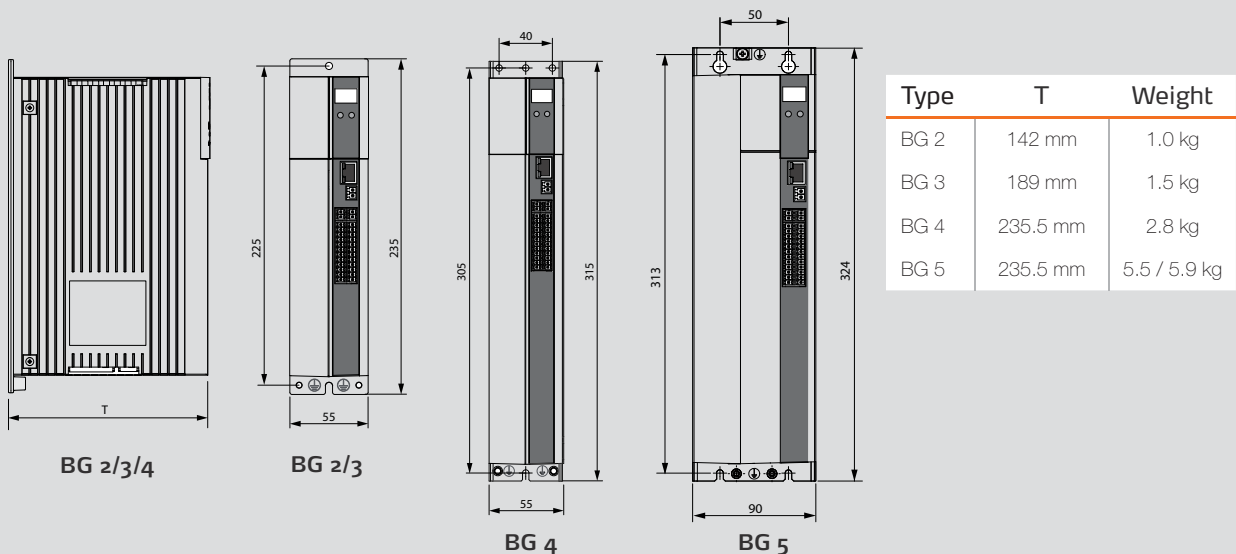
HCJ

(230V / 400V)



Technical data:

- PLC Motion
- Brake driver
- Sequenced driving set positioning
- Online bearing profile generator
- DRIVEMANAGER-Software
- Integrated brake resistor (BG 3+4)
- Safe stop according to Category 3 EN954-1
- Radio interference filter up to 7.5 kW
- Electronic cam

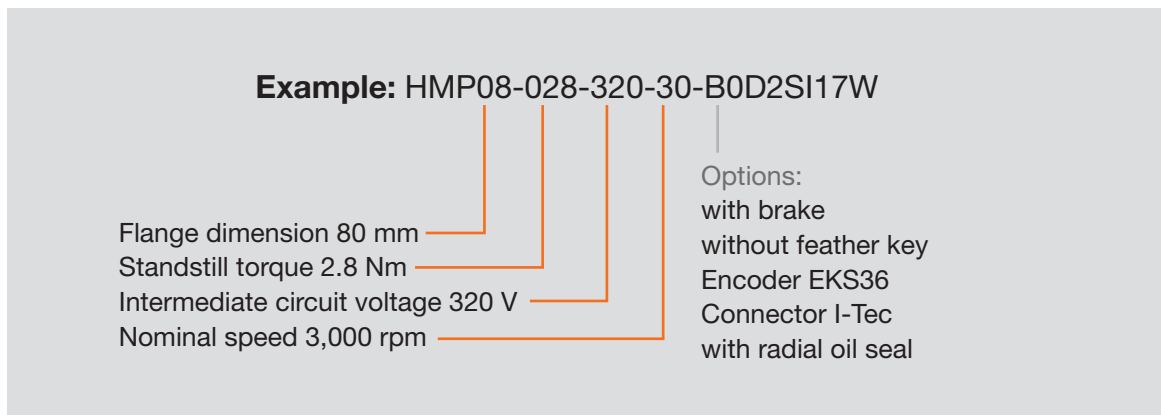
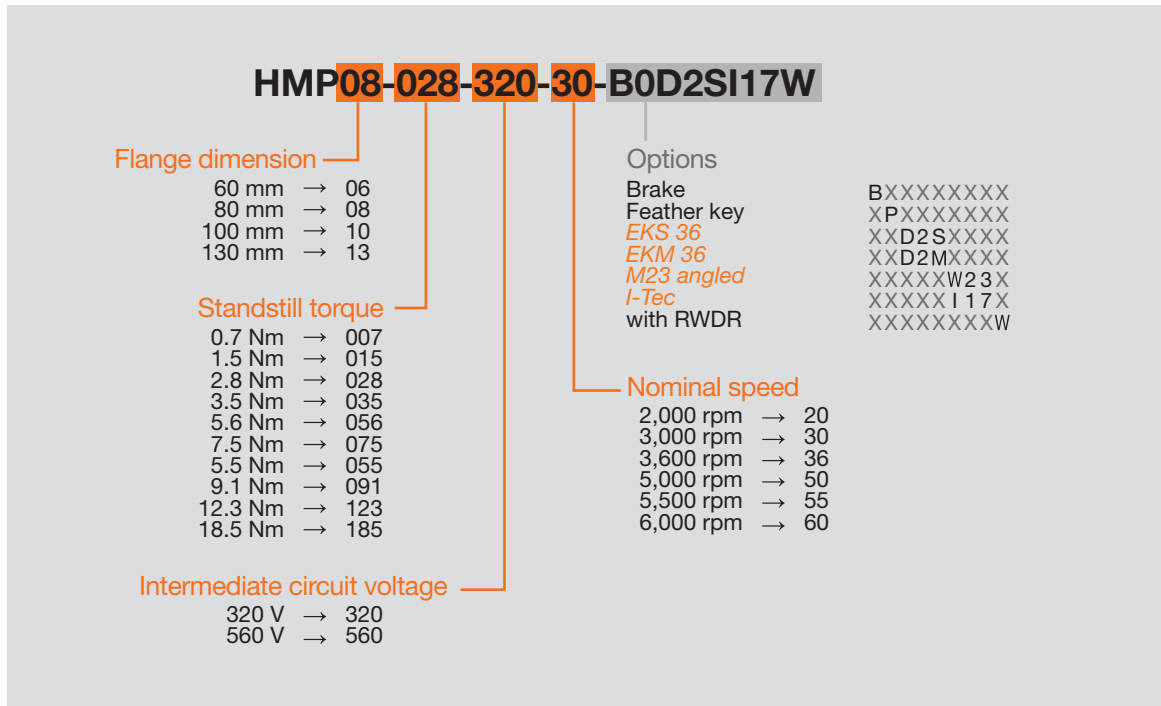


Overview motor-controller combinations

Motor type	Name	U _{ZK} [V]	I _n [A]	M _o [Nm]	M _n [Nm]	n _n [rpm]	Controller		
							Typ	BG	Output current [A]
HMP06	HMP06-007	320	0.8	0.7	0.6	3,000	HCJ 22.003	2	3 / 9
		320	1.3	0.7	0.5	6,000	HCJ 22.003	2	3 / 9
	HMP06-015	320	1.5	1.5	1.2	3,000	HCJ 22.003	2	3 / 9
		320	2.2	1.5	0.9	6,000	HCJ 22.006	3	5.9 / 17.7
HMP08	HMP08-028	320	2.6	2.8	2.4	3,000	HCJ 22.006	3	5.9 / 17.7
		320	3.7	2.8	1.7	5,500	HCJ 22.006	3	5.9 / 17.7
		560	1.6	2.8	2.3	3,000	HCJ 24.002	2	2 / 6
		560	2.2	2.8	1.7	5,500	HCJ 24.004	3	3.5 / 10.5
	HMP08-035	320	3.7	3.5	3.2	3,000	HCJ 22.006	3	5.9 / 17.7
		320	4.8	3.5	2.1	5,500	HCJ 22.008	4	8 / 24
		560	2.1	3.5	3.2	3,000	HCJ 24.004	3	3.5 / 10.5
		560	2.8	3.5	2.1	5,500	HCJ 24.007	4	6.5 / 19.5
HMP10	HMP10-056	560	3.0	5.6	4.8	3,000	HCJ 24.004	3	3.5 / 10.5
		560	3.7	5.6	3.4	5,000	HCJ 24.007	4	6.5 / 19.5
	HMP10-075	560	4.1	7.5	6.4	3,000	HCJ 24.007	4	6.5 / 19.5
		560	5.3	7.5	4.8	5,000	HCJ 24.012	5	12 / 36
HMP13	HMP13-055	320	4.1	5.5	4.8	2,000	HCJ 22.006	3	5.9 / 17.7
		320	6.0	5.5	4.0	3,600	HCJ 22.008	4	8 / 24
		560	2.3	5.5	4.8	2,000	HCJ 24.004	3	3.5 / 10.5
		560	3.4	5.5	4.0	3,600	HCJ 24.007	4	6.5 / 19.5
	HMP13-091	560	3.4	9.1	7.2	2,000	HCJ 24.007	4	6.5 / 19.5
		560	5.0	9.1	6.0	3,600	HCJ 24.012	5	12 / 36
	HMP13-123	560	4.5	12.3	9.6	2,000	HCJ 24.007	4	6.5 / 19.5
		560	6.7	12.3	8.0	3,600	HCJ 24.012	5	12 / 36
	HMP13-185	560	6.5	18.5	14.4	2,000	HCJ 24.012	5	12 / 36
		560	8.0	18.5	10.0	3,600	HCJ 24.016	5	16 / 48



■ Product key



Technical data subject to change! Last changes 03/2016

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