

Series 80B3x3		80B313-0240-	80B313-0240-	80B313-0420-	80B313-0710-	80B323-0260-	80B323-0460-	80B323-0460-	80B323-0710-	80B333-0330-	80B333-0540-	80B333-0710-	80B343-0360-
→ Rated Values for ECOVARIO		616D	414	214	114D	616D	414	214	114D	616D	414	114D	616D
Peak torque*	[Nm]	3.4	3.5	3.6	2.7	6.7	6.0	7.0	4.7	9.4	8.7	6.9	11.7
Stall torque*	[Nm]	1.6	1.5	1.6	1.4	2.6	2.6	2.7	2.3	3.6	3.3	3.4	4.2
Rated torque*	[Nm]	1.2	1.3	1.4	1.4	1.9	2.1	2.5	2.2	1.8	2.5	3.3	3.0
Rated speed	[min ⁻¹]	5000	5000	4000	1500	5000	5000	2000	1500	5000	4000	500	4000
Peak current (per phase)*	[A _{RMS}]	7.1	7.2	12.6	14.1	7.7	14.0	13.9	14.1	9.9	14.1	14.1	11.5
Stall current (per phase)*	[A _{RMS}]	3.2	3.0	5.5	7.5	3.0	5.2	5.2	7.1	3.7	5.3	7.1	3.6
Rated current (per phase)*	[A _{RMS}]	2.7	2.7	4.7	7.4	2.5	4.2	5.0	7.1	2.3	4.3	7.1	2.4
Rated DC link voltage	[V _{DC}]	560	325	150	60	560	325	150	60	560	325	60	560

* Mounting Flange 300 x 300 x 20 mm

→ Technical Data Motor													
Torque constant	[Nm/A _{eff}]	0.45	0.50	0.30	0.19	0.74	0.51	0.50	0.32	0.72	0.59	0.47	1.23
Voltage constant	[V/1000min ⁻¹]	32.2	32.2	18.9	12.2	56.5	32.6	32.6	20.1	62.4	39.0	30.3	76.1
Winding resistance (at 25°C)	[Ω]	5.74	5.74	1.98	0.94	5.98	2.07	2.07	0.85	4.06	1.86	1.28	4.71
Winding inductivity	[mH]	14.14	14.15	4.81	2.05	17.2	5.76	5.76	2.25	13.36	5.42	3.2	15.46
Motor inertia	[kgm ² x10 ⁻³]	0.08	0.08	0.08	0.08	0.16	0.16	0.16	0.16	0.24	0.24	0.24	0.32
Number of motor phases		3											
Number of pole pairs		3											
Insulation class		F, 155 °C											
Max. DC link voltage	[V _{DC}]	850											
Temperature sensor		PTC, 120 °C											
Ambient temperature	[°C]	-20 ... +40											
Protection class (without A-Side)		IP54											
Max. axial load	[N]	130											
Max. radial load	[N]	250											
Max. axial load during assembly	[N]	500											
Overall length L _{total}	[mm]	185			210			235			250		
Mass	[kg]	4.2			5.2			6.2			7.2		

→ Technical Data Multiturn Absolute Encoder BISS													
Resolution „multiturn“ (revolutions)	[Bit]	12											
Resolution „singleturn“ (per revolution)	[Bit/U]	17											
Operating voltage	[V]	10 ... 30											

- Product Quality Assurance Notification IBExU 14 ATEX Q006 for servo motors in potentially explosive atmospheres
- EC-Type Examination Certificate IBExU 04 ATEX 1091 (in preparation)
- according to equipment group II, category 2G, temperature class T4 (135 °C)
- pressure-tight encapsulation „db“
- explosion group IIB
- suitable for use in zones 1 and 2
- fulfil the demands of DIN EN 60079-0 and EN 60079-1

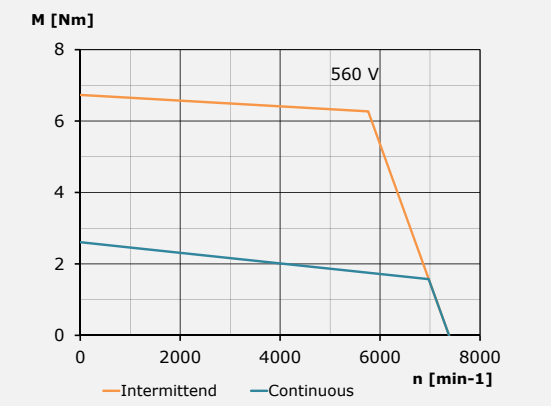
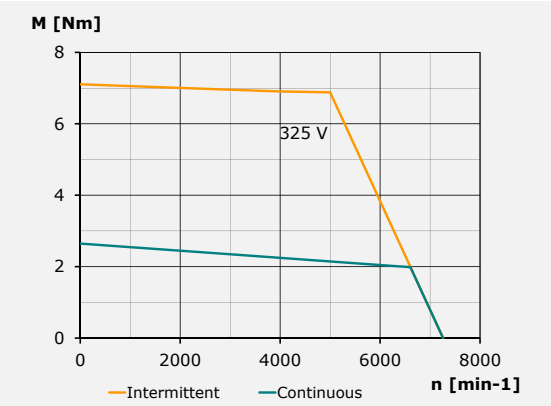
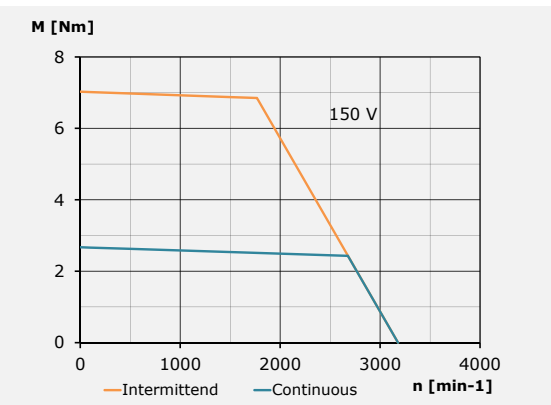
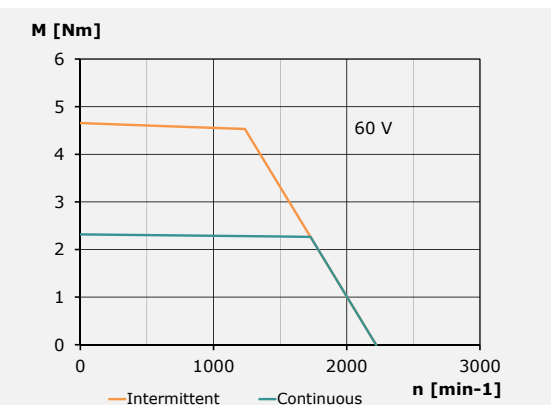


Characteristic examples of specific applications

Type of motor	Servo amplifier	Characteristics
80B313-0240	ECOVARIO 616D	<p>M [Nm]</p> <p>560 V</p> <p>Intermittent Continuous</p> <p>n [min-1]</p>
80B313-0240	ECOVARIO 414	<p>M [Nm]</p> <p>325 V</p> <p>Intermittent Continuous</p> <p>n [min-1]</p>
80B313-0420	ECOVARIO 214	<p>M [Nm]</p> <p>150 V</p> <p>Intermittent Continuous</p> <p>n [min-1]</p>
80B313-0710	ECOVARIO 114D	<p>M [Nm]</p> <p>60 V</p> <p>Intermittent Continuous</p> <p>n [min-1]</p>



Characteristic examples of specific applications

Type of motor	Servo amplifier	Characteristics
80B323-0260	ECOVARIO 616D	
80B323-0460	ECOVARIO 414	
80B323-0460	ECOVARIO 214	
80B323-0710	ECOVARIO 114D	

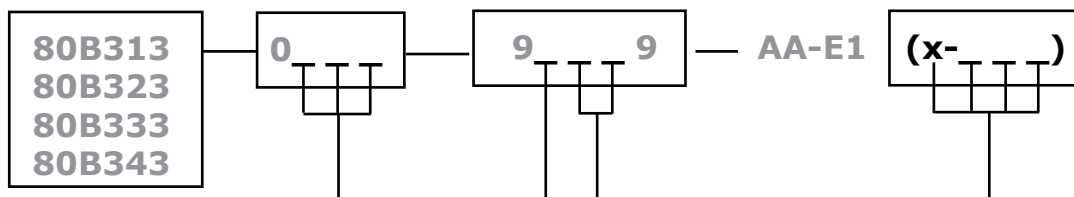


Characteristic examples of specific applications

Type of motor	Servo amplifier	Characteristics
80B333-0330	ECOVARIO 616	
80B333-0540	ECOVARIO 414	
80B333-0710	ECOVARIO 214	
80B333-0710	ECOVARIO 114	

Characteristic examples of specific applications

Type of motor	Servo amplifier	Characteristics															
80B343-0360	ECOVARIO 616D	<p>The graph displays the torque-speed characteristics for the motor at 560 V. The y-axis represents torque M in Nm, ranging from 0 to 12. The x-axis represents speed n in min⁻¹, ranging from 0 to 6000. Two curves are shown: an orange line for 'Intermittent' operation and a blue line for 'Continuous' operation. Both curves show a linear decrease in torque as speed increases, with a sharp drop to zero torque at approximately 5000 min⁻¹.</p> <table border="1"> <caption>Approximate data points from the graph</caption> <thead> <tr> <th>Speed n [min⁻¹]</th> <th>Intermittent Torque M [Nm]</th> <th>Continuous Torque M [Nm]</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>12</td> <td>4</td> </tr> <tr> <td>2000</td> <td>11</td> <td>3.5</td> </tr> <tr> <td>4000</td> <td>10</td> <td>3</td> </tr> <tr> <td>5000</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Speed n [min ⁻¹]	Intermittent Torque M [Nm]	Continuous Torque M [Nm]	0	12	4	2000	11	3.5	4000	10	3	5000	0	0
Speed n [min ⁻¹]	Intermittent Torque M [Nm]	Continuous Torque M [Nm]															
0	12	4															
2000	11	3.5															
4000	10	3															
5000	0	0															

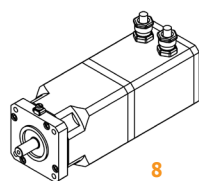


→ **Winding types**

Indication is proportional to the allowable phase current of the motor

→ **Holding brake**

0	No holding brake
8	4.5 Nm holding brake integrated



With holding brake fixed, motor length (L_{ges}) increases by 48 mm. The weight of the motors with holding brake increases by 0.9 kg.

→ **Encoder type**

8J	Incremental Encoder resolution 8.000 Ink/U
8M	Incremental Encoder resolution 20.000 Ink/U
8L	Incremental Encoder resolution 40.000 Ink/U
8N	Incremental Encoder resolution 80.000 Ink/U
8X	SINCOS-Encoder, programmable resolution, max. 128.000 Ink/U
7W	Multiturn absolute value encoder, resolution 17 bit/rev and 12 bit revolutions, BiSS interface, for ECOVARIO®

→ **Cable Design and Length**

Specification in parentheses: (plug connector - cable length in cm)

Cable lengths up to 35 m are available. Motor and encoder plug are located in the wiring space of the motor. Both cables are lead through the cable glands which are in the scope of delivery. For the connection to the servo amplifier plug connectors are available for
 ECOVARIO 214/414 → x = 4
 ECOVARIO 114/114Dual → x = 5
 ECOVARIO 616/616Dual → x = 6

Motor cable	Ø 8.9 mm; trailing capability from bend radius > 125 mm
Encoder cable	Ø 10.4 mm; trailing capability from bend radius > 104 mm

Further encoders and options on request.

→ **Ordering Examples**

80B323-0260-908J9-AA-E1 (4-500)	Motor 80B323 with incremental encoder, Resolution 8000 inc. / rev., RS422 interface, Plug Connector for ECOVARIO, cable length 5 m
80B333-0710-907W9-AA-E1 (4-100)	Motor 80B333 with multiturn absolute encoder, Resolution 17 Bit / U and 12-bit rev., BiSS interface, Plug connector for ECOVARIO, cable length 1 m

→ **Motor Cable Assignment**

Connection	Motor cable wire
Phase U	3
Phase V	1
Phase W	4
PE	gn/ye
Shield	Bare

→ **Incremental Encoder Cable Assignment**

Connection	Description	Encoder cable wire	Pin DSub (9 pins)
U_p	+5V	Brown	1
GND	GND	White	6
A	Channel A	Green	2
/A	Channel /A	Yellow	7
B	Channel B	Grey	3
/B	Channel /B	Pink	8
N	Channel N	Blue	4
/N	Channel /N	Red	9
T+	Temperature sensor +	Violet	5
T-	Temperature sensor -	Black	n.c.
Shield	Housing	Bare	Shroud

→ **Encoder Cable Assignment ABS**

Connection	Encoder cable wire	Pin HD DSub (15 pins)*
U_p	White	1
GND	Brown	6
Kanal CLK	Yellow	14
Kanal /CLK	Green	15
Kanal DAT	Red	4
Kanal /DAT	Blue	9
PTC T+	Violet	5
PTC T-	Black	10
SENS +	Pink	12
Shield	Bare	Shroud

*(additionally bridged wires see documentation)