

ATEX Servo Motors Series 80B3x3

Perfectly tailored to your requirements



ATEX II 2G Ex db IIB T4 Gb

Pressure proof encapsulation „db“, suitable for use in Ex zones 1 and 2

Temperature class T4 (135 °C)



Power range up to 1,2 kW

Peak torque up to 12 Nm

Rated speed up to 5000 rpm



Diverse applications

Different encoder types

Mechanical options

Flange:

88 mm

Rated DC link voltage:

60 ... 560 V_{DC}

Encoder:

Absolute value encoder
(singleturn, multiturn)

Incremental encoder

SinCos encoder

Choice of mechanical options:

Holding brake

Gear

Customer-specific cable lengths

Standards and directives:

ATEX directive 2014/34/EU

EN 60079-0

EN 60079-1

Certificates:

EC type examination certificate: IBExU
04 ATEX 1091

Recognition of quality assurance:
IBExU 20 ATEX Q008

ATEX Servo Motors Series 80B3x3

→ Technical data

Series 80B		313-0240	313-0240	313-0420	313-0710
Rated values for ECOVARIO®		616D	414	214	114D
Peak torque *)	[Nm]	3,45	3,5	3,58	2,69
Stall torque *)	[Nm]	1,57	1,5	1,64	1,43
Rated torque *)	[Nm]	1,22	1,3	1,4	1,37
Rated speed	[min ⁻¹]	5000	5000	4000	1500
Maximum speed	[min ⁻¹]	7000	7000	5500	3500
Peak current (per phase) *)	[A _{RMS}]	7,1	7,2	12,6	14,1
Stall current (per phase) *)	[A _{RMS}]	3,2	3,0	5,5	7,5
Rated current (per phase) *)	[A _{RMS}]	2,7	2,7	4,7	7,4
Rated power	[W]	639	680	586	215
Rated DC link voltage	[V _{DC}]	560	325	150	60

*) Mounting flange 300 x 300 x 20 mm

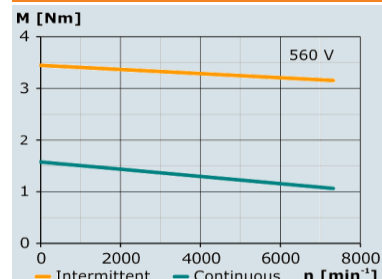
Technical data motor

Torque constant	[Nm/A _{RMS}]	0,449	0,50	0,296	0,185
Voltage constant	[V/1000 min ⁻¹]	32,189	32,189	18,92	12,2
Winding resistance (at 25 °C)	[Ω]	5,74	5,74	1,98	0,94
Winding inductivity	[mH]	14,14	14,14	4,81	2,05
Motor inertia	[kgm ² x 10 ⁻³]	0,08			
Number of motor phases		3			
Number of pole pairs		3			
Insulation class		F, 155 °C			
DC link voltage max.	[V _{DC}]	850			
Temperature sensor		PTC, 120 °C			
Ambient temperature	[°C]	-20...+40			
Protection class (except side A)		IP54			
Axial load max.	[N]	130			
Radial load max.	[N]	250			
Axial load assembly max.	[N]	500			
Total length L _{total}	[mm]	185			
Mass	[kg]	4,2			

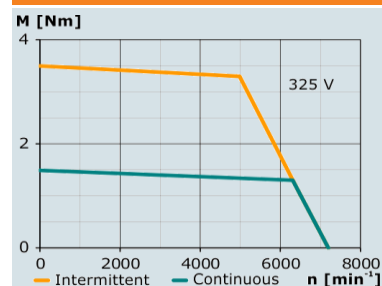
Technical data multiturn absolute encoder BISS

Resolution "multiturn" (revolutions)	[Bit]	12
Resolution "singleturn" (per revolution)	[Bit/U]	17
Operating voltage	[V]	10...30

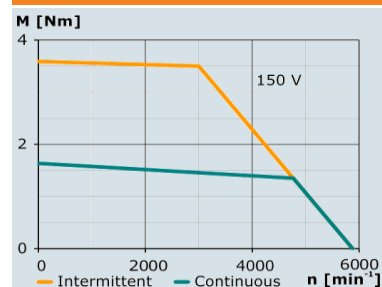
Characteristic 80B313-0240 / ECOV. 616D



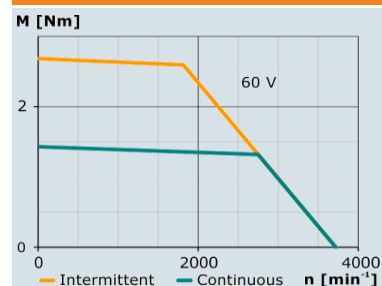
Characteristic 80B313-0240 / ECOV. 414



Characteristic 80B313-0420 / ECOV. 214



Characteristic 80B313-0710 / ECOV. 114D



ATEX Servo Motors Series 80B3x3

→ Technical data

Series 80B		323-0260	323-0460	323-0460	323-0710
Rated values for ECOVARIO®		616D	414	214	114D
Peak torque *)	[Nm]	6,73	7,1	7,0	4,66
Stall torque *)	[Nm]	2,6	2,6	2,7	2,32
Rated torque *)	[Nm]	1,9	2,15	2,5	2,27
Rated speed	[min ⁻¹]	5000	5000	2000	1500
Maximum speed	[min ⁻¹]	7000	7000	3000	2000
Peak current (per phase) *)	[A _{RMS}]	7,7	14,0	13,9	14,1
Stall current (per phase) *)	[A _{RMS}]	3,0	5,2	5,2	7,1
Rated current (per phase) *)	[A _{RMS}]	2,5	4,2	5,0	7,1
Rated power	[W]	995	1126	523	356
Rated DC link voltage	[V _{DC}]	560	325	150	60

*) Mounting flange 300 x 300 x 20 mm

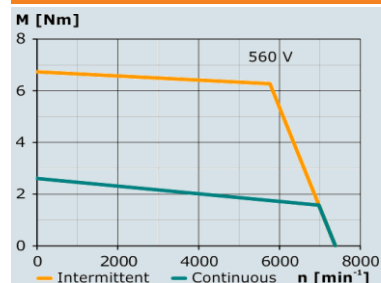
Technical data motor

Torque constant	[Nm/A _{RMS}]	0,735	0,512	0,50	0,32
Voltage constant	[V/1000 min ⁻¹]	56,53	32,59	32,59	20,09
Winding resistance (at 25 °C)	[Ω]	5,89	2,07	2,07	0,85
Winding inductivity	[mH]	17,2	5,76	5,76	2,25
Motor inertia	[kgm ² x 10 ⁻³]			0,16	
Number of motor phases				3	
Number of pole pairs				3	
Insulation class				F, 155 °C	
DC link voltage max.	[V _{DC}]			850	
Temperature sensor				PTC, 120 °C	
Ambient temperature	[°C]			-20...+40	
Protection class (except side A)				IP54	
Axial load max.	[N]			130	
Radial load max.	[N]			250	
Axial load assembly max.	[N]			500	
Total length L _{total}	[mm]			210	
Mass	[kg]			5,2	

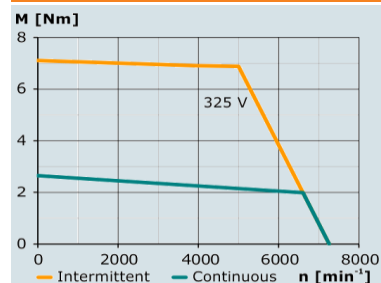
Technical data multiturn absolute encoder BISS

Resolution "multiturn" (revolutions)	[Bit]		12
Resolution "singleturn" (per revolution)	[Bit/U]		17
Operating voltage	[V]		10...30

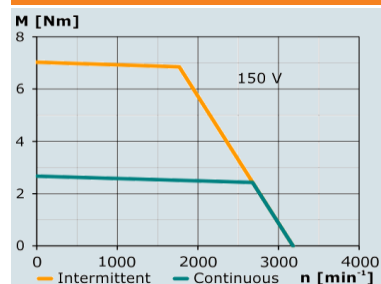
Characteristic 80B323-0260 / ECOV. 616D



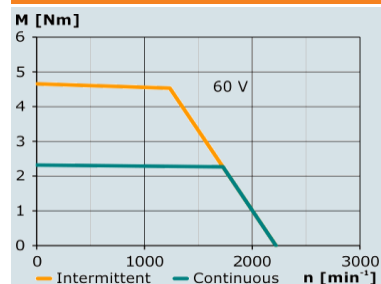
Characteristic 80B323-0460 / ECOV. 414



Characteristic 80B323-0460 / ECOV. 214



Characteristic 80B323-0710 / ECOV. 114D



ATEX Servo Motors Series 80B3x3

→ Technical data

Series 80B		333-0330	333-0540	333-0710	343-0360
Rated values for ECOVARIO®		616D	414	114D	616D
Peak torque *)	[Nm]	9,43	8,68	6,87	11,71
Stall torque *)	[Nm]	3,57	3,33	3,35	4,2
Rated torque *)	[Nm]	1,8	2,53	3,32	3
Rated speed	[min ⁻¹]	5000	4000	500	4000
Maximum speed	[min ⁻¹]	6500	6000	1400	5500
Peak current (per phase) *)	[A _{RMS}]	9,9	14,1	14,1	11,5
Stall current (per phase) *)	[A _{RMS}]	3,7	5,3	7,1	3,6
Rated current (per phase) *)	[A _{RMS}]	2,3	4,3	7,1	2,4
Rated power	[W]	942	1060	174	1257
Rated DC link voltage	[V _{DC}]	560	325	60	560

*) Mounting flange 300 x 300 x 20 mm

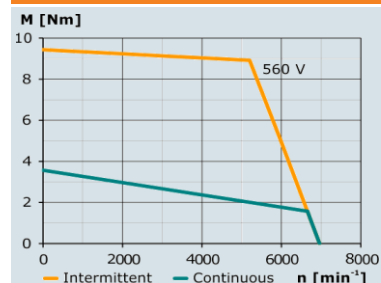
Technical data motor

Torque constant	[Nm/A _{RMS}]	0,72	0,587	0,466	1,228
Voltage constant	[V/1000 min ⁻¹]	62,43	38,97	30,28	76,13
Winding resistance (at 25 °C)	[Ω]	4,059	1,86	1,28	4,71
Winding inductivity	[mH]	13,36	5,42	3,2	15,46
Motor inertia	[kgm ² x 10 ⁻³]		0,24		0,32
Number of motor phases			3		
Number of pole pairs			3		
Insulation class			F, 155 °C		
DC link voltage max.	[V _{DC}]		850		
Temperature sensor			PTC, 120 °C		
Ambient temperature	[°C]		-20...+40		
Protection class (except side A)			IP54		
Axial load max.	[N]		130		
Radial load max.	[N]		250		
Axial load assembly max.	[N]		500		
Total length L _{total}	[mm]		235		255
Mass	[kg]		6,2		7,2

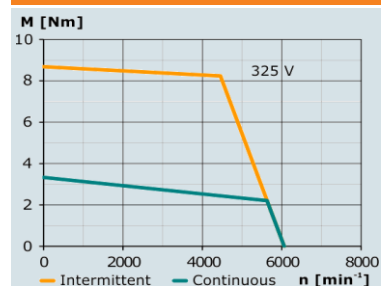
Technical data multiturn absolute encoder BISS

Resolution "multiturn" (revolutions)	[Bit]	12
Resolution "singleturn" (per revolution)	[Bit/U]	17
Operating voltage	[V]	10...30

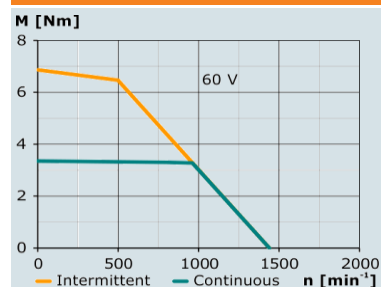
Characteristic 80B333-0330 / ECOV. 616D



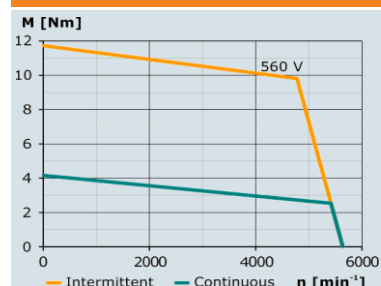
Characteristic 80B333-0540 / ECOV. 414



Characteristic 80B333-0710 / ECOV. 114D

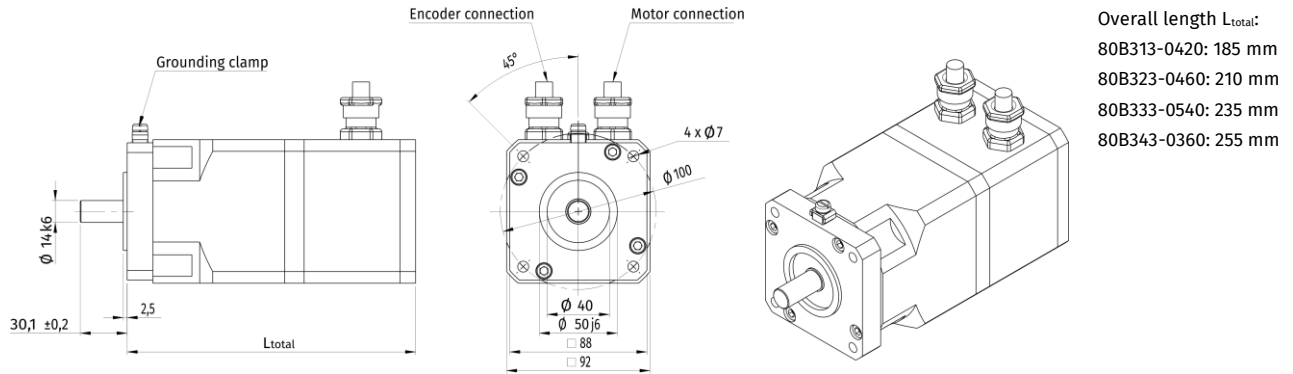


Characteristic 80B343-0360 / ECOV. 616D

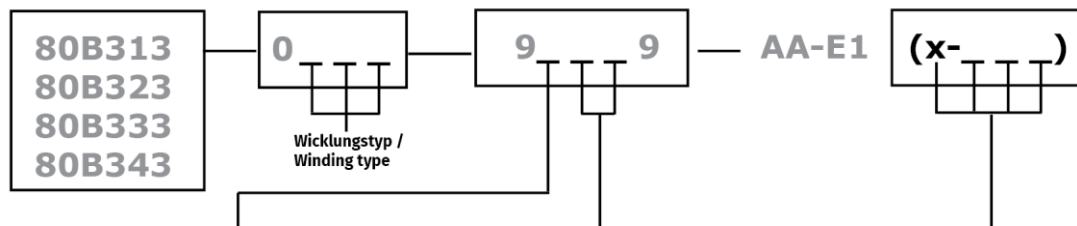


ATEX Servo Motors Series 80B3x3

→ Dimensions



→ Ordering key



Holding brake		Encoder Type		Cable design and length
0	none	8J	Incremental encoder 8 000 inc/rev	Specification in parentheses: (connector - cable length in cm)
8	4,5 Nm holding brake integrated	8M	Incremental encoder 20 000 inc/rev	Cable lengths up to 35 m are available. Motor and encoder connector are located in the wiring space of the motor.
 With holding brake fixed, motor length (L) increases by 48 mm. The weight of the motors with holding brake increases by 0,9 kg.		8L	Incremental encoder 40 000 inc/rev	Both cables are lead through the cable glands which are in the scope of delivery.
		8N	Incremental encoder 80 000 inc/rev	For the connection to the servo amplifier connectors are available for:
		8X	SINCOS encoder, 1000 periods/rev, resolution programmable, max. 512 000 inc/rev	■ ECOVARIO 214/414 -> x = 4 ■ ECOVARIO 114/114D -> x = 5 ■ ECOVARIO 616/616D -> x = 6
		7W	Multiturn absolute value encoder, resolution 17 bit/rev und 12 bit revolutions	
Further options on request.				
		Motor cable	Ø 8,9 mm; trailing capability from bend radius > 90 mm	
		Motor/brake cable	Ø 10,8 mm; trailing capability from bend radius > 105 mm	
		Encoder cable	Ø 9,5 mm; trailing capability from bend radius > 90 mm	

Ordering examples

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

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→ Connector and cable assignment

Motor/(brake) cable assignment for ECOVARIO			Assignment incremental encoder cable			Assignment absolute encoder cable		
Connection	Wire ECOVARIO 114/214/414	Wire ECOVARIO 616(D)	Connection	Encoder cable wire	Pin D-Sub HD 15 pins	Connection	Encoder cable wire	Pin D-Sub HD 15 pins
Phase U	3	1	+5V	brown	1	+Up	white	1
Phase V	1	2	GND	white	6	GND	brown	6
Phase W	4	3	Channel A	green	2	Channel CLK	yellow	14
Brake + (optional)	black	black	Channel /A	yellow	7	Channel /CLK	green	15
Brake - (optional)	white	white	Channel B	grey	3	Channel DAT	pink	4
PE	gn/ye	gn/ye	Channel /B	pink	8	Channel /DAT	grey	9
Shield	bare	bare	Channel N	blue	4	PTC T+	blue	5
			Channel /N	red	9	PTC T-	red	10
			PTC	violet	5	Shield*	bare	Shroud
			PTC	black	10	*) D-Sub HD 15 pins: additional bridges in connector (cf. operating manual), double shielding		
			Shield*	bare	Shroud			

*) D-Sub HD 15 pins: additional bridges in connector (cf. operating manual), double shielding