



BRUSHLESS DC MOTORS | Ø 28 - 42 mm 3.2 - 49 W

BT SERIES

We offer a broad range of high quality motors in standard and customized configurations. Our customer-centric approach makes us the ideal supplier for your project, especially to instrument and apparatus builders. In addition, we offer immediate delivery, thanks to always having a high number of motors in stock.

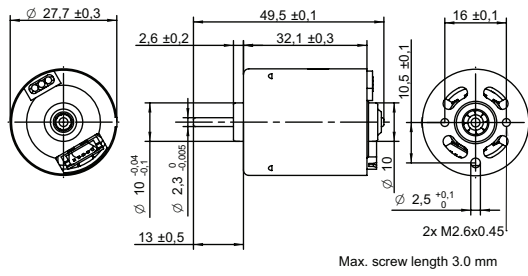
Customizations include:

- ✓ Customized harness
- ✓ Winding configuration
- ✓ Shaft configuration
- ✓ And more...

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MODEL	DIAMETER mm	LENGTH mm	VOLTAGE V	SPEED RPM	TORQUE mNm	POWER W	PAGE
BT2832	28	32	12 24	5300 4800	5.8 7.9	3.2 3.9	1
BT2838	28	38	12 24	5100 5300	6.6 7.4	3.5 4.1	2
BT3229	32	29	12 24	4700	8 9	4 4.5	3
BT3640	36	40	12 24	4900 5100	21	11	4
BT3649	36	49	12 24	5200	29 37	16 20	5
BT3657	36	57	12 24	5400	30 35	17 20	6
BT4259	42	59	12 24	4600 5200	54 76	26 41	7
BT4266	42	66	12 24	5200	51 91	28 49	8

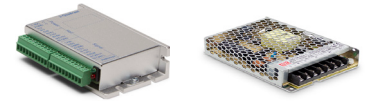
DRAWING (mm)



PHOTO



OPTIONS POWER SUPPLIES



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MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

MOTOR DATA	BT2832-12	BT2832-24	C
Nominal voltage	V	12	24
Commutator (hall) voltage	V	3.3~5	3.3~5
No load speed	rpm	6000	
No load current	mA	90	62
Nominal speed	rpm	5300	4800 ●
Nominal torque	mNm	5.8	7.9
Nominal current	A	0.40	0.30
Start/Stall torque	mNm	42	38
Start/Stall current	A	2.5	1.2
Max. efficiency	%	66	56
Nominal power	W	3.2	3.9
Terminal resistance	Ω	4.1	19
Terminal inductance	mH	1.7	7
Torque constant	mNm/A	18	33
Speed constant	rpm/V	500	250
Speed/ torque gradient	rpm/mNm	920	610
Rotor inertia	gcm ²	13~17	14~18

MECHANICAL DATA

Mechanical Data	Value	C
Bearing type	Ball bearing	●
Axial play	mm	0
Bearing radial clearance	μm	10
Max. axial load (dynamic)	N	3.2
Max. force for press fits (static)	N	4.9

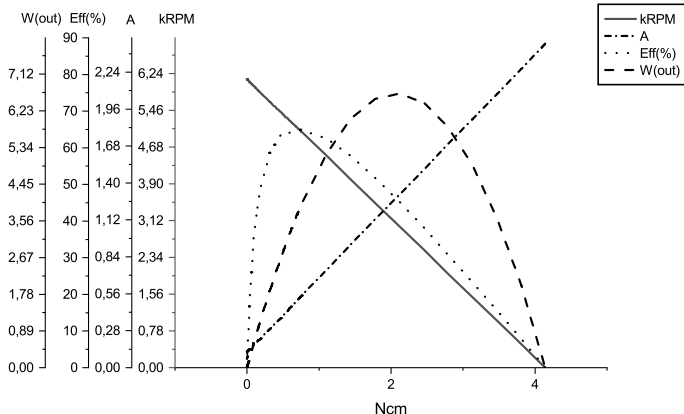
OTHER SPECIFICATIONS

Other Specifications	BT2832-12	BT2832-24	C
Number of pole pairs	2		
Number of phases	3		
Weight	g	71	71
Typical noise level	dBA	34	34
Operating temperature	°C		-40 to +80
Max. winding temperature	°C		150
Motor insulation class	A		
IP rating	IP40		
Slot pole pairs	6S4P		
Rotor magnet	BNM-8		
Hall sensors and power harness length	mm	160 ± 10	●
Power harness end connector	A2502X-03P		●
Power harness	UL3132 22AWG 300V 150°C		●
Hall sensors harness end connector	KR1500 MX1.5mm		●
Hall sensors harness	UL10368 26AWG 300V 105°C		●
Shaft length from flange	mm	13	●
Shaft diameter ø	mm	2.3	
Housing material	SECD-0 0.7T		
Shaft material	SUS420 J2		
Magnet material	Bonding NdFeB		
Rotor balancing grade	G6.3		
Service life	h	5000	
Manufacturing standard	ISO9001 TS16949		

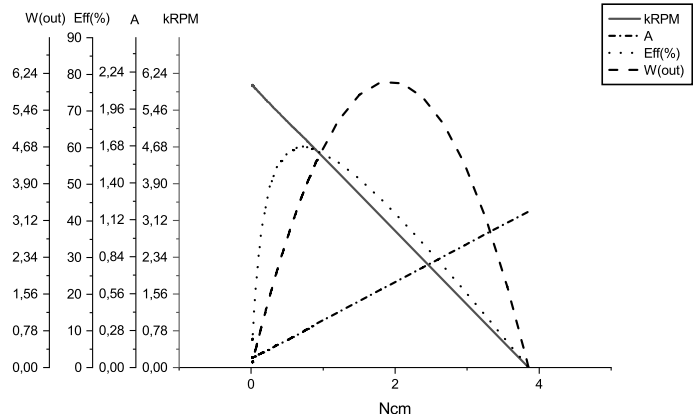
CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall		C
Phase	Cable color	Phase	Cable color	
U	Grey	HU	Green	
V	White	HV	Blue	
W	Brown	HW	Yellow	
		+5V	Red	
		GND	Black	

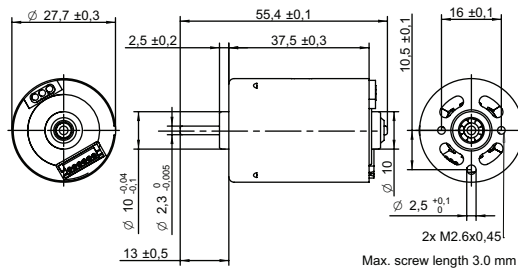
MOTOR DATA DIAGRAM 12V



MOTOR DATA DIAGRAM 24V



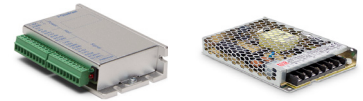
DRAWING (mm)



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MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

MOTOR DATA	BT2838-12	BT2838-24	C
Nominal voltage	V	12	24
Commutator (hall) voltage	V	3.3~5	3.3~5
No load speed	rpm	6000	
No load current	mA	54	44
Nominal speed	rpm	5100	5300
Nominal torque	mNm	6.6	7.4
Nominal current	A	0.4	0.3
Start/Stall torque	mNm	40	52
Start/Stall current	A	2.1	1.4
Max. efficiency	%	72	72
Nominal power	W	3.5	4.1
Terminal resistance	Ω	3.1	13
Terminal inductance	mH	1.2	4.9
Torque constant	mNm/A	19	38
Speed constant	rpm/V	500	250
Speed/ torque gradient	rpm/mNm	770	720
Rotor inertia	gcm ²	14~17	50~58

MECHANICAL DATA

Mechanical Data	Value	C
Bearing type	Ball bearing	●
Axial play	mm	0
Bearing radial clearance	μm	10
Max. axial load (dynamic)	N	3.2
Max. force for press fits (static)	N	4.9

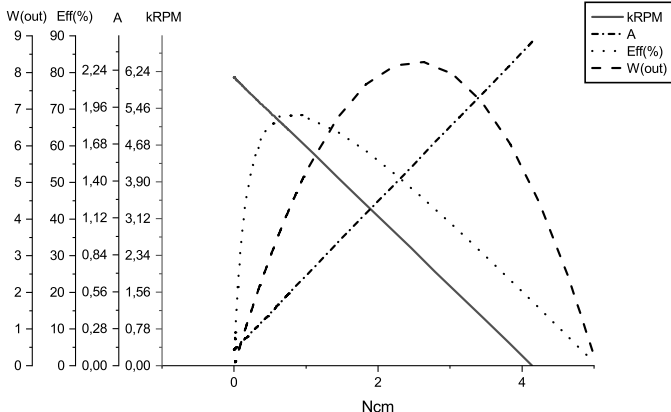
OTHER SPECIFICATIONS

Other Specifications	BT2838-12	BT2838-24	C
Number of pole pairs	2		
Number of phases	3		
Weight	g	71	70
Typical noise level	dBA	38	37
Operating temperature	°C		-40 to +80
Max. winding temperature	°C		150
Motor insulation class			A
IP rating			IP40
Slot pole pairs			6S4P
Rotor magnet			BNM-8
Hall sensors and power harness length	mm	160 ± 10	●
Power harness end connector			A2502X-03P
Power harness			UL3132 22AWG 300V 150°C
Hall sensors harness end connector			KR1500 MX1.5mm
Hall sensors harness			UL1007 26AWG 300V 80°C
Shaft length from flange	mm	13	●
Shaft diameter Ø	mm	2.3	
Housing material			SECD-0 0.7T
Shaft material			SUS420 J2
Magnet material			Bonding NdFeB
Rotor balancing grade			G6.3
Service life	h	5000	
Manufacturing standard			ISO9001 TS16949

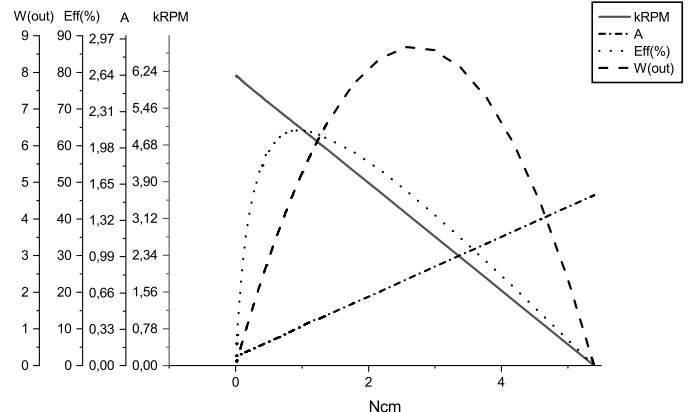
CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall		C
Phase	Cable color	Phase	Cable color	
U	Grey	HU	Green	
V	White	HV	Blue	
W	Brown	HW	Yellow	
		+5V	Red	
		GND	Black	

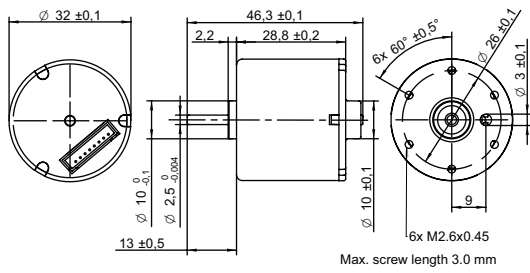
MOTOR DATA DIAGRAM 12V



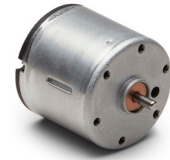
MOTOR DATA DIAGRAM 24V



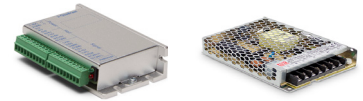
DRAWING (mm)



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OPTIONS POWER SUPPLIES



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MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

MOTOR DATA	BT3229-12	BT3229-24	C
Nominal voltage	V	12	24
Commutator (hall) voltage	V	3.3~5	3.3~5
No load speed	rpm	6000	
No load current	mA	85	40
Nominal speed	rpm	4700	4700
Nominal torque	mNm	8	9
Nominal current	A	0.5	0.3
Start/Stall torque	mNm	42	47
Start/Stall current	A	2.1	1.3
Max. efficiency	%	69	65
Nominal power	W	4	4.5
Terminal resistance	Ω	4.2	17
Terminal inductance	mH	1.2	3.7
Torque constant	mNm/A	21	38
Speed constant	rpm/V	500	250
Speed/ torque gradient	rpm/mNm	590	530
Rotor inertia	gcm ²	24~28	20~23

MECHANICAL DATA

Mechanical Data	BT3229-12	BT3229-24	C
Bearing type	Sleeve bearing		●
Axial play	mm	0.28	0.3
Max. axial load (dynamic)	N	3.2	

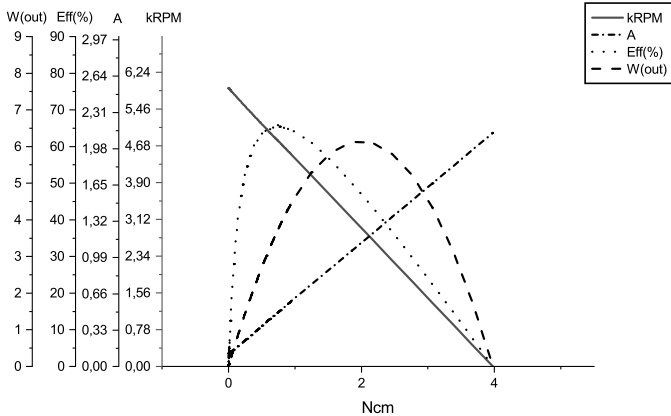
OTHER SPECIFICATIONS

Other Specifications	BT3229-12	BT3229-24	C
Number of pole pairs	3		
Number of phases	3		
Weight	g	79	76
Typical noise level	dBA	29	31
Operating temperature	°C	-40 to +80	
Max. winding temperature	°C	150	
Motor insulation class	A		
IP rating	IP40		
Slot pole pairs	9S6P		
Rotor magnet	BNM-6	BNM-8	
Hall sensors and power harness length	mm	160 ± 10	
Hall sensors and power harness end connector	A2501 (XH-8P)		
Hall sensors and power harness	UL1007 26AWG 300V 80°C		
Connector on motor body	JST:B8B-ZR		
Shaft length from flange	mm	13	
Shaft diameter Ø	mm	2.5	
Housing material	SECD-0 1.0T		
Shaft material	SUS420 J2		
Magnet material	Bonding NdFeB		
Rotor balancing grade	G6.3		
Service life	h	5000	
Manufacturing standard	ISO9001 TS16949		

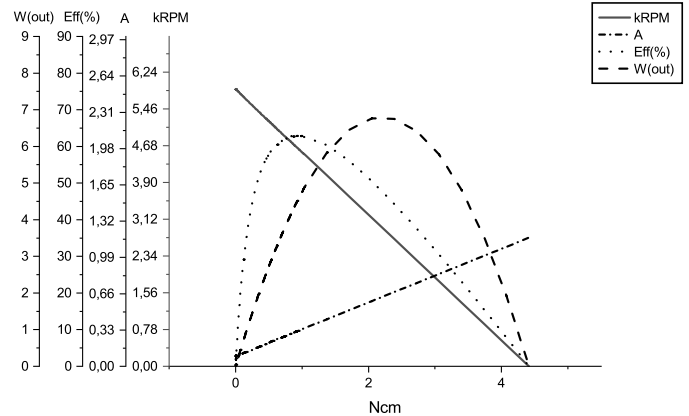
CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall		C
Phase	Cable color	Phase	Cable color	
U	White	HU	Yellow	
V	Brown	HV	Blue	
W	Grey	HW	Green	
		+5V	Red	
		GND	Black	

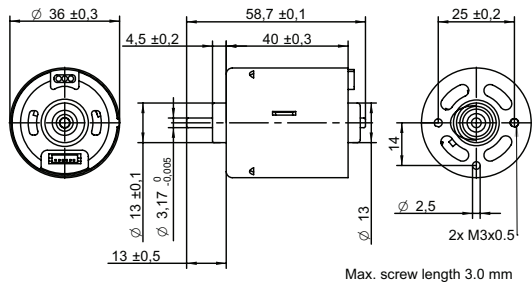
MOTOR DATA DIAGRAM 12V



MOTOR DATA DIAGRAM 24V



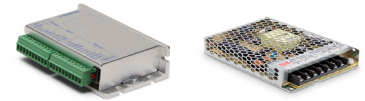
DRAWING (mm)



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MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

MOTOR DATA	BT3640-12	BT3640-24	C
Nominal voltage	V	12	24
Commutator (hall) voltage	V	3.3~5	3.3~5
No load speed	rpm	6000	
No load current	mA	220	120
Nominal speed	rpm	4900	5100
Nominal torque	mNm	21	21
Nominal current	A	1.3	0.7
Start/Stall torque	mNm	130	150
Start/Stall current	A	6.9	3.9
Max. efficiency	%	72	77
Nominal power	W	11	
Terminal resistance	Ω	1.1	4.2
Terminal inductance	mH	0.7	2.7
Torque constant	mNm/A	20	39
Speed constant	rpm/V	500	250
Speed/ torque gradient	rpm/mNm	240	240
Rotor inertia	gcm ²	27~33	27~28

MECHANICAL DATA

Mechanical Data			C
Bearing type		Ball bearing	●
Axial play	mm	0.63	0.69
Bearing radial clearance	μm	12	
Max. axial load (dynamic)	N	4.9	
Max. force for press fits (static)	N	13	

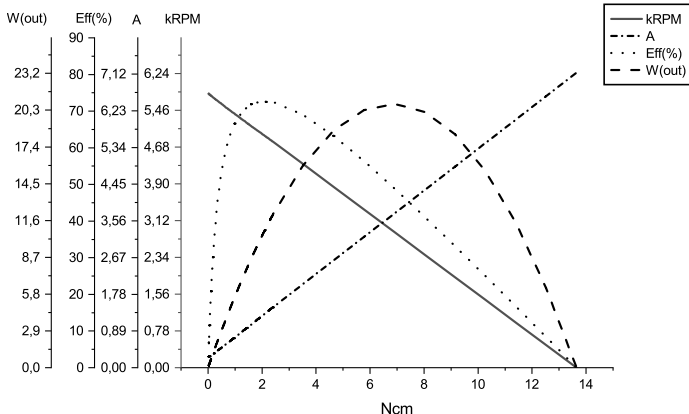
OTHER SPECIFICATIONS

Other Specifications	BT3640-12	BT3640-24	C
Number of pole pairs	2		
Number of phases	3		
Weight	g	150	
Typical noise level	dBA	37	35
Operating temperature	°C	-40 to +80	
Max. winding temperature	°C	150	
Motor insulation class	A		
IP rating	IP40		
Slot pole pairs	6S4P		
Rotor magnet	BNM-8		
Hall sensors and power harness length	mm	155 ± 10	●
Power harness end connector	A2502X-03P		
Power harness	UL3132 20AWG 300V 150°C		
Hall sensors harness end connector	KR1500 MX1.5mm		
Hall sensors harness	UL10368 26AWG 300V 105°C		
Shaft length from flange	mm	13	●
Shaft diameter ø	mm	3.17	
Housing material	SECD-0 1.0T		
Shaft material	S70C		
Magnet material	Bonding NdFeB		
Rotor balancing grade	G6.3		
Service life	h	5000	
Manufacturing standard	ISO9001 TS16949		

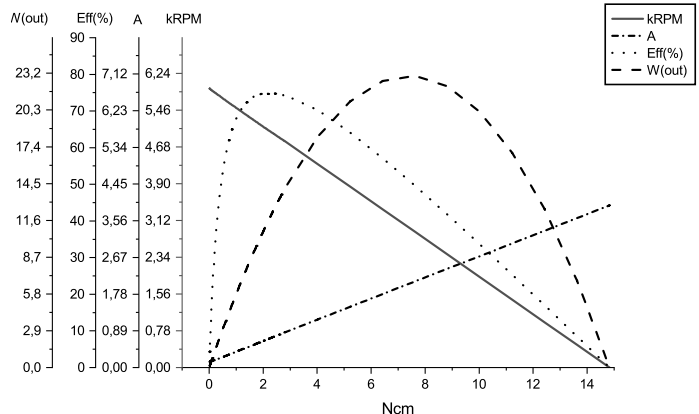
CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall		C
Phase	Cable color	Phase	Cable color	
U	White	HU	Green	
V	Brown	HV	Blue	
W	Grey	HW	Yellow	
		+5V	Red	
		GND	Black	

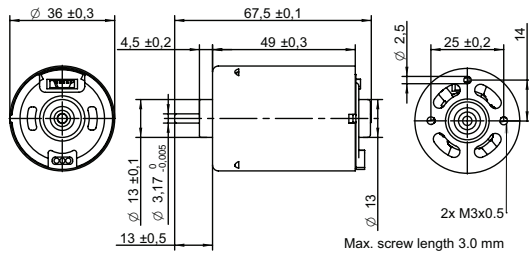
MOTOR DATA DIAGRAM 12V



MOTOR DATA DIAGRAM 24V



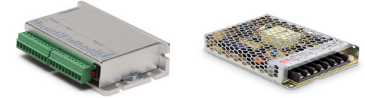
DRAWING (mm)



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MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

MOTOR DATA	BT3649-12	BT3649-24	C
Nominal voltage	V	12	24
Commutator (hall) voltage	V	3.3~5	3.3~5
No load speed	rpm	6000	
No load current	mA	280	160
Nominal speed	rpm	5200	5200
Nominal torque	mNm	29	37
Nominal current	A	1.8	1.1
Start/Stall torque	mNm	210	280
Start/Stall current	A	11	7.8
Max. efficiency	%	75	76
Nominal power	W	16	20
Terminal resistance	Ω	0.6	2
Terminal inductance	mH	0.4	1.8
Torque constant	mNm/A	19	36
Speed constant	rpm/V	500	250
Speed/ torque gradient	rpm/mNm	180	140
Rotor inertia	gcm ²	46~48	45~49

MECHANICAL DATA

Mechanical Data	BT3649-12	BT3649-24	C
Bearing type	Ball bearing		●
Axial play	mm	0.51	0.47
Bearing radial clearance	μm	12	
Max. axial load (dynamic)	N	4.9	
Max. force for press fits (static)	N	13	

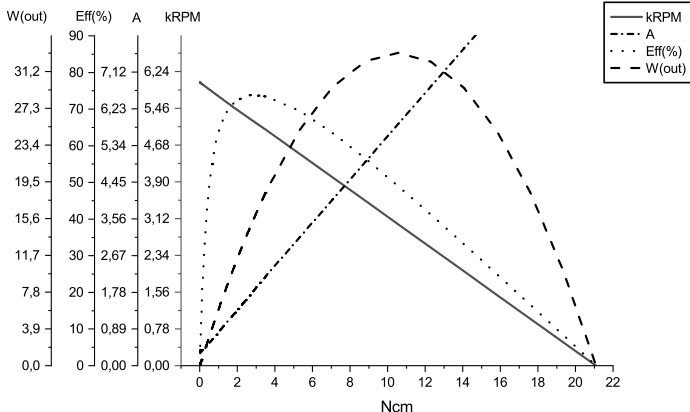
OTHER SPECIFICATIONS

Other Specifications	BT3649-12	BT3649-24	C
Number of pole pairs	2		
Number of phases	3		
Weight	g	200	
Typical noise level	dBA	37	38
Operating temperature	°C	-40 to +80	
Max. winding temperature	°C	150	
Motor insulation class	A		
IP rating	IP40		
Slot pole pairs	6S4P		
Rotor magnet	BNM-8		
Hall sensors and power harness length	mm	160 ± 10	●
Power harness end connector	A2502X-03P		●
Power harness	UL3132 22AWG 300V 150°C		●
Hall sensors harness end connector	A1501H00-5P		●
Hall sensors harness	UL1007 26AWG 300V 80°C		●
Shaft length from flange	mm	13	●
Shaft diameter Ø	mm	3.17	
Housing material	SECD-0 1.0T		
Shaft material	S70C		
Magnet material	Bonding NdFeB		
Rotor balancing grade	G6.3		
Service life	h	5000	
Manufacturing standard	ISO9001 TS16949		

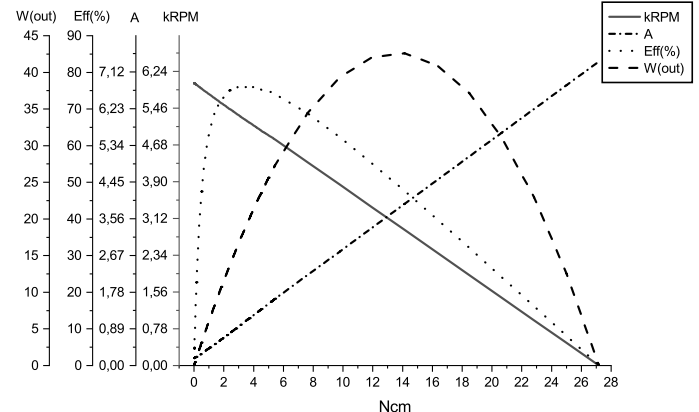
CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall		C
Phase	Cable color	Phase	Cable color	
U	White	HU	Green	
V	Brown	HV	Blue	
W	Grey	HW	Yellow	
		+5V	Red	
		GND	Black	

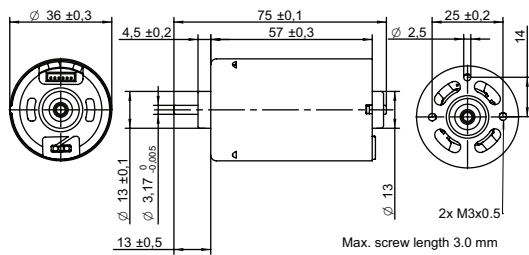
MOTOR DATA DIAGRAM 12V



MOTOR DATA DIAGRAM 24V



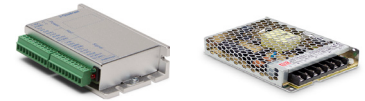
DRAWING (mm)



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OPTIONS POWER SUPPLIES



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MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

MOTOR DATA	BT3657-12	BT3657-24	C
Nominal voltage	V	12	24
Commutator (hall) voltage	V	3.3~5	3.3~5
No load speed	rpm	6000	
No load current	mA	280	160
Nominal speed	rpm	5400	5400
Nominal torque	mNm	30	35
Nominal current	A	1.9	1.1
Start/Stall torque	mNm	260	310
Start/Stall current	A	14	8.4
Max. efficiency	%	78	80
Nominal power	W	17	20
Terminal resistance	Ω	0.6	1.8
Terminal inductance	mH	0.4	1.4
Torque constant	mNm/A	19	38
Speed constant	rpm/V	500	250
Speed/ torque gradient	rpm/mNm	180	160
Rotor inertia	gcm ²	48~51	52~61

MECHANICAL DATA

Mechanical Data	BT3657-12	BT3657-24	C
Bearing type	Ball bearing		●
Axial play	mm	0.64	0.71
Bearing radial clearance	μm	12	
Max. axial load (dynamic)	N	4.9	
Max. force for press fits (static)	N	13	

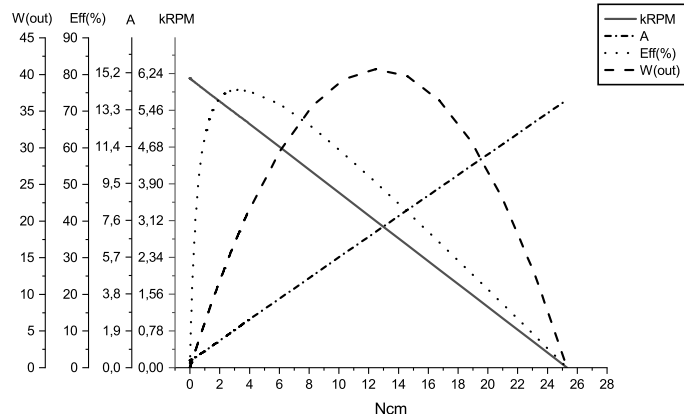
OTHER SPECIFICATIONS

Other Specifications	BT3657-12	BT3657-24	C
Number of pole pairs	2		
Number of phases	3		
Weight	g	230	240
Typical noise level	dBA	37	38
Operating temperature	°C	-40 to +80	
Max. winding temperature	°C	150	
Motor insulation class	A		
IP rating	IP40		
Slot pole pairs	6S4P		
Rotor magnet	BNM-8		
Hall sensors and power harness length	mm	160 ± 10	●
Power harness end connector	XHP-3		●
Power harness	UL3132 20AWG 300V 150°C		●
Hall sensors harness end connector	ZHR-5		●
Hall sensors harness	UL10368 26AWG 300V 105°C		●
Shaft length from flange	mm	13	●
Shaft diameter Ø	mm	3.17	
Housing material	SECD-0 1.0T		
Shaft material	S70C		
Magnet material	Bonding NdFeB		
Rotor balancing grade	G6.3		
Service life	h	5000	
Manufacturing standard	ISO9001 TS16949		

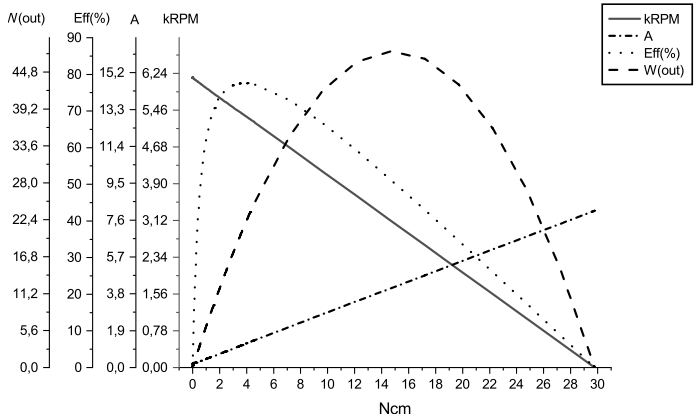
CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall		C
Phase	Cable color	Phase	Cable color	
U	White	HU	Green	
V	Brown	HV	Blue	
W	Grey	HW	Yellow	
		+5V	Red	
		GND	Black	

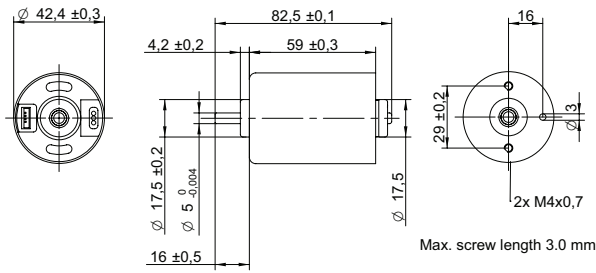
MOTOR DATA DIAGRAM 12V



MOTOR DATA DIAGRAM 24V



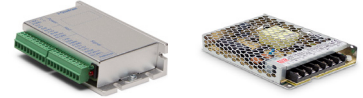
DRAWING (mm)



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MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

MOTOR DATA		BT4259-12	BT4259-24	C
Nominal voltage	V	12	24	
Commutator (hall) voltage	V	3.3~5	3.3~5	
No load speed	rpm	5700	6000	
No load current	mA	470	270	
Nominal speed	rpm	4600	5200	●
Nominal torque	mNm	54	76	
Nominal current	A	3.2	2.2	
Start/Stall torque	mNm	330	540	
Start/Stall current	A	16	14	
Max. efficiency	%	70	78	
Nominal power	W	26	41	
Terminal resistance	Ω	0.4	0.9	
Terminal inductance	mH	0.2	0.6	
Torque constant	mNm/A	21	40	
Speed constant	rpm/V	500	250	
Speed/ torque gradient	rpm/mNm	86	68	
Rotor inertia	gcm ²	130~148	130~148	

MECHANICAL DATA

			C
Bearing type		Ball bearing	●
Axial play	mm	0.58	0.63
Bearing radial clearance	μm	13	
Max. axial load (dynamic)	N	7.1	

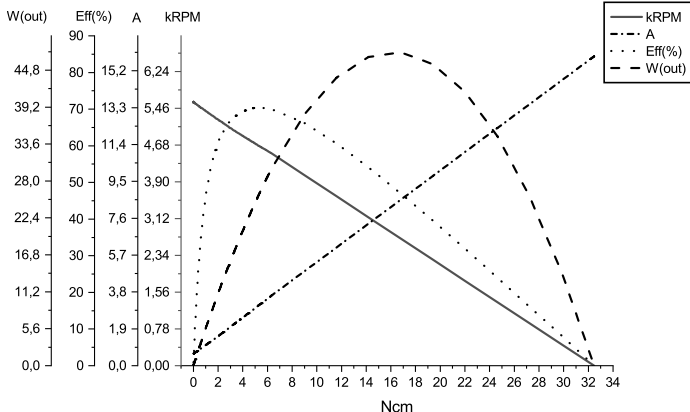
OTHER SPECIFICATIONS

	BT4259-12	BT4259-24	C
Number of pole pairs		3	
Number of phases		3	
Weight	g	340	
Typical noise level	dBA	40	42
Operating temperature	°C	-40 to +80	
Max. winding temperature	°C	150	
Motor insulation class		A	
IP rating		IP40	
Slot pole pairs		9S6P	
Rotor magnet		BNM-8	
Hall sensors and power harness length	mm	155 ± 10	●
Power harness end connector		A2502X-03P	●
Power harness		UL3132 20AWG 300V 150°C	●
Hall sensors harness end connector		KR1500 MX1.5mm	●
Hall sensors harness		UL10368 26AWG 300V 105°C	●
Shaft length from flange	mm	16	●
Shaft diameter ø	mm	5	
Housing material		SECD-0 1.4T	
Shaft material		SUS420 J2	
Magnet material		Bonding NdFeB	
Rotor balancing grade		G6.3	
Service life	h	5000	
Manufacturing standard		ISO9001 TS16949	

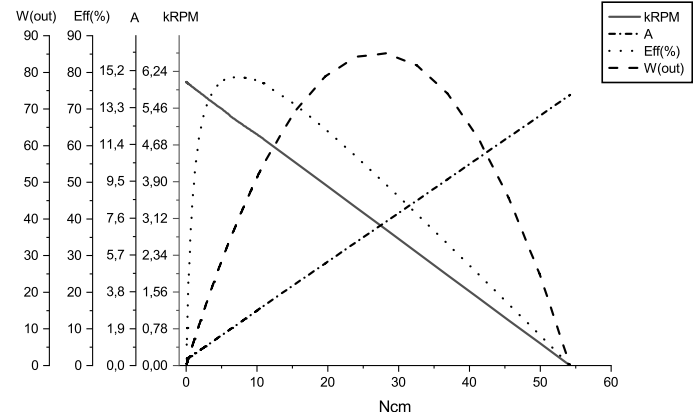
CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall		C
Phase	Cable color	Phase	Cable color	
U	Brown	HU	Green	
V	Grey	HV	Blue	
W	White	HW	Yellow	
		+5V	Red	
		GND	Black	

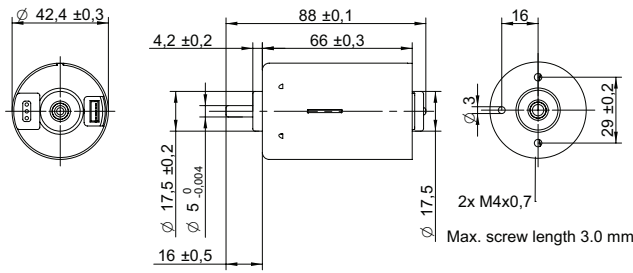
MOTOR DATA DIAGRAM 12V



MOTOR DATA DIAGRAM 24V



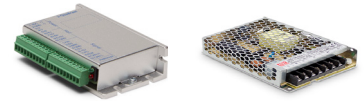
DRAWING (mm)



PHOTO



OPTIONS POWER SUPPLIES



● C = Customizations are offered on demand even for smaller quantities. Typical customizations indicated with green dot at column end. Please contact us for any customization request.

MOTOR TYPE

3-Phase, 120-degree, brushless DC Motor with integrated hall sensors.

MOTOR DATA		BT4266-12	BT4266-24	C
Nominal voltage	V	12	24	
Commutator (hall) voltage	V	3.3~5	3.3~5	
No load speed	rpm	6000		
No load current	mA	550	300	
Nominal speed	rpm	5200	5200	●
Nominal torque	mNm	51	91	
Nominal current	A	3	2.6	
Start/Stall torque	mNm	430	680	
Start/Stall current	A	22	17	
Max. efficiency	%	78	79	
Nominal power	W	28	49	
Terminal resistance	Ω	0.3	0.7	
Terminal inductance	mH	0.1	0.5	
Torque constant	mNm/A	20	40	
Speed constant	rpm/V	500	250	
Speed/ torque gradient	rpm/mNm	100	57	
Rotor inertia	gcm ²	155~156	157~159	

MECHANICAL DATA

			C
Bearing type		Ball bearing	●
Axial play	mm	0.56	0.45
Bearing radial clearance	μm	13	
Max. axial load (dynamic)	N	7.1	

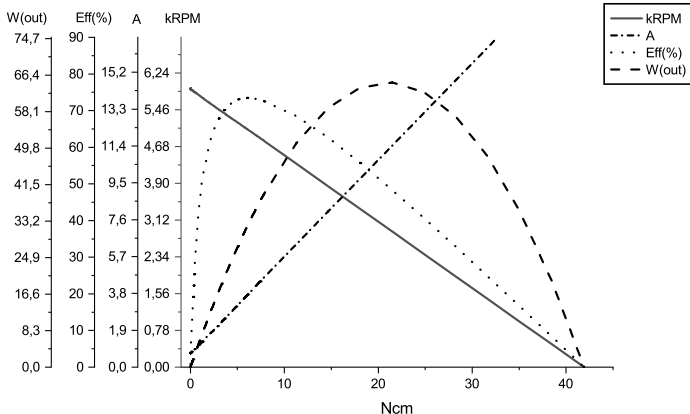
OTHER SPECIFICATIONS

	BT4266-12	BT4266-24	C
Number of pole pairs	3		
Number of phases	3		
Weight	g	380	390
Typical noise level	dBA	42	38
Operating temperature	°C		-40 to +80
Max. winding temperature	°C		150
Motor insulation class			A
IP rating			IP40
Slot pole pairs			9S6P
Rotor magnet			BNM-8
Hall sensors and power harness length	mm	155 ± 10	●
Power harness end connector			A2502X-03P
Power harness			UL3132 20AWG 300V 150°C
Hall sensors harness end connector			KR1500 MX1.5mm
Hall sensors harness			UL10368 26AWG 300V 105°C
Shaft length from flange	mm	16	●
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Housing material			SECD-0 1.4T
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Magnet material			Bonding NdFeB
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Service life	h	5000	
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CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall		C
Phase	Cable color	Phase	Cable color	
U	Brown	HU	Green	
V	Grey	HV	Blue	
W	White	HW	Yellow	
		+5V	Red	
		GND	Black	

MOTOR DATA DIAGRAM 12V



MOTOR DATA DIAGRAM 24V

