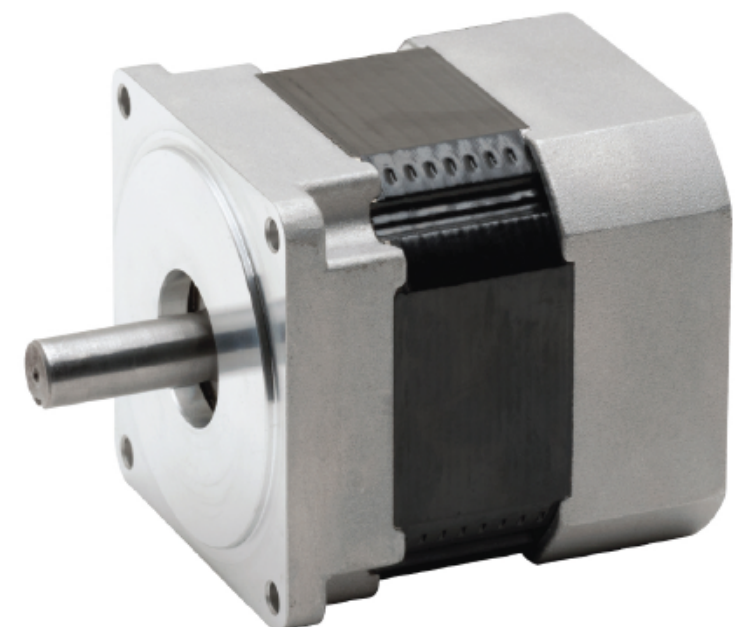
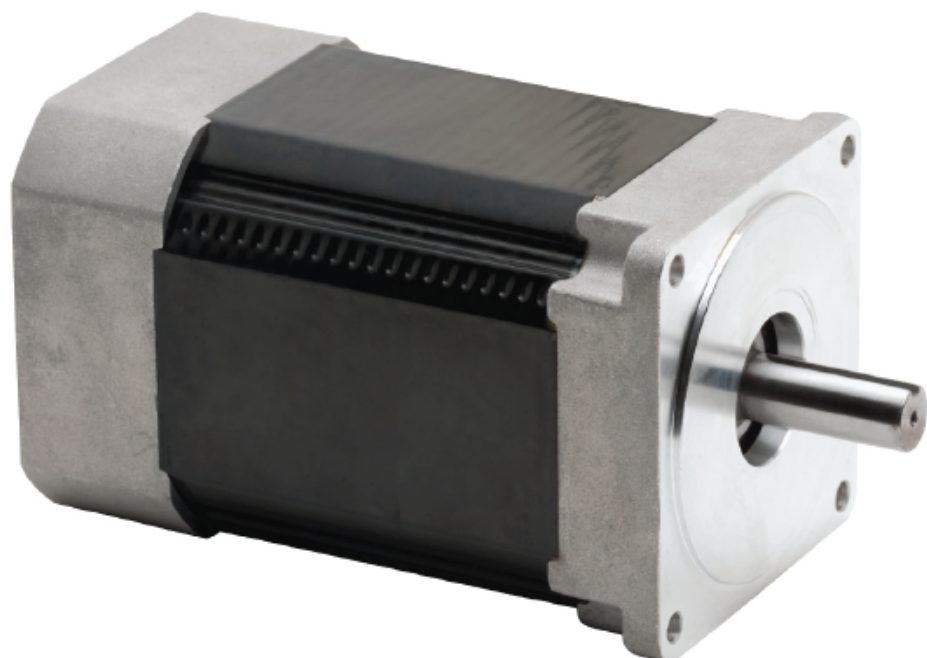
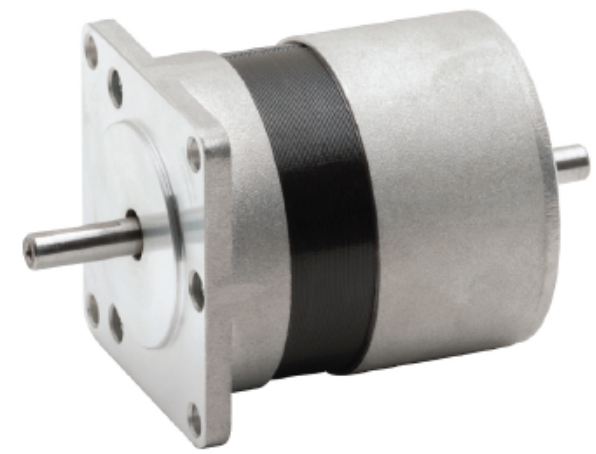
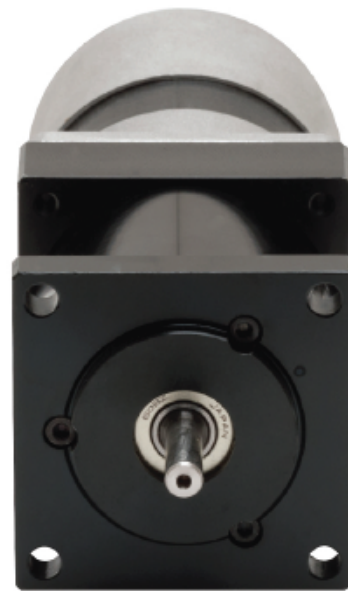
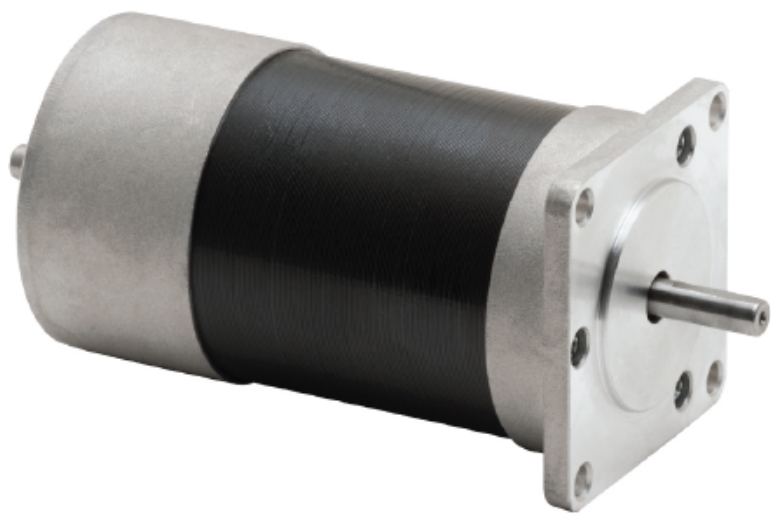
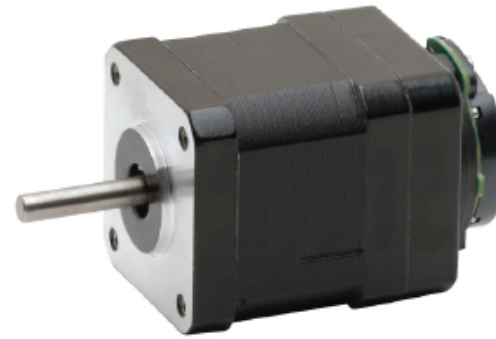
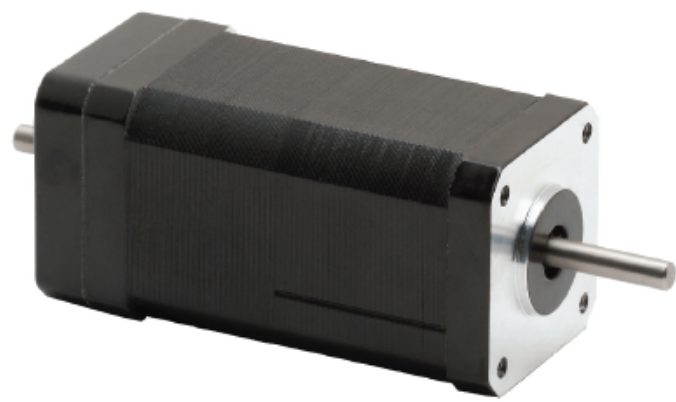




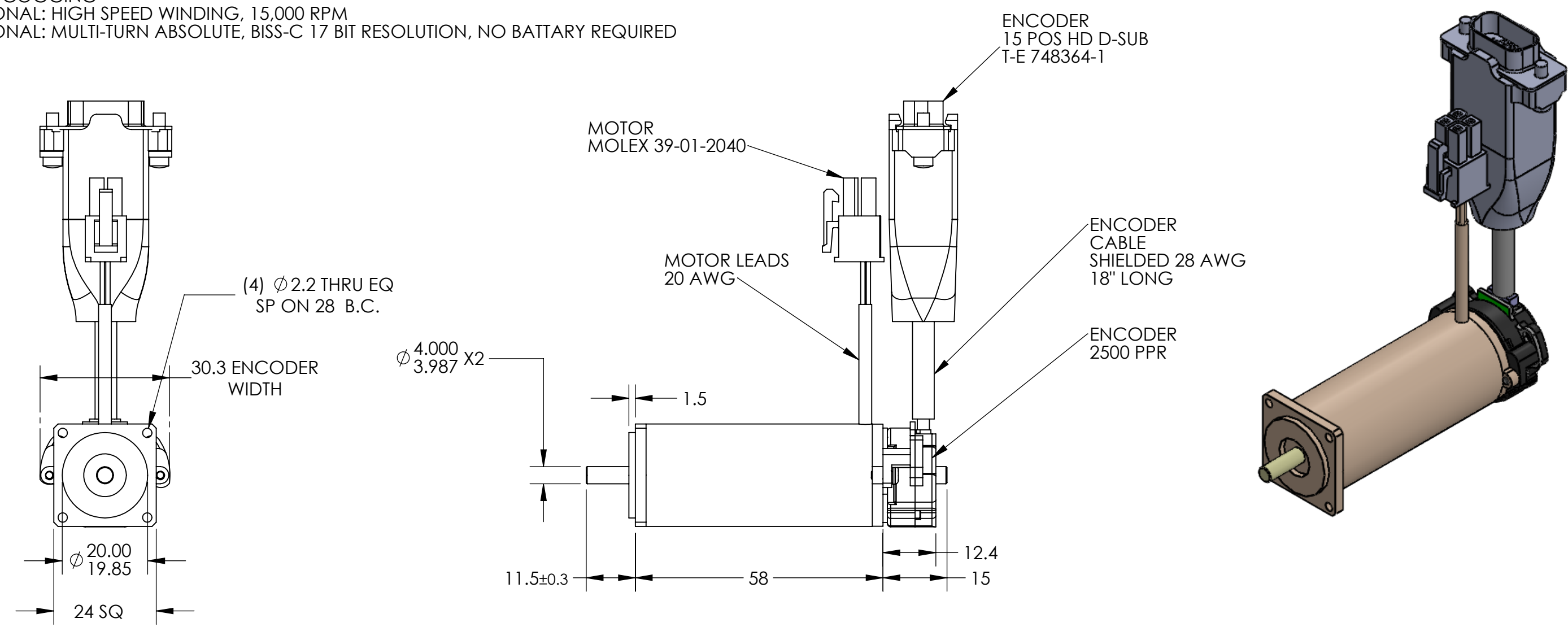
# BRUSHLESS MOTORS



CYMATIX BRUSHLESS MOTORS									Encoder Resolution		OPTIONAL BRAKE	BISS-C ABSOLUTE
	Flange [mm]	Motor Length [mm]	Rated Voltage [vdc]	Rated Torque [N-m]	Rated speed [rpm]	Power [Watts]	Max Voltage [vdc]	Front Shaft Dia x Length [mm]	5000 ppr	2500 ppr		
MP24-2B-MX2500-NN-01	24	58	24	0.1	3000	30	170	4 x 11.5		X		X
E017-1A-MX5000-NN-001	42	53	24	0.1	3000	30	170	5 x 24	X		X	X
E017-2A-MX5000-NN-001	42	72	24	0.2	3000	60	170	5 x 24	X		X	X
E017-3A-MX5000-NN-001	42	90	24	0.3	3000	90	170	5 x 24	X		X	X
EP23-1A-MX5000-CN-001	57	71	72	0.39	6000	220	170	6.35 x 20.5	X		X	X
EP23-2A-MX5000-CN-001	57	97	72	0.63	5250	350	170	6.35 x 20.5	X		X	X
EP23-3A-MX5000-CN-001	57	122	72	0.78	5750	467	170	6.35 x 20.5	X		X	X
MP60-3A-MX5000-CN-001	60	143	48	1.3	4000	540	170	14 x 30	X		X	X
MP60-3B-MX5000-CN-001	60	143	72	1.3	4000	540	310	14 x 30	X		X	X
MP60-3C-MX5000-CN-001	60	143	170	1.3	3000	400	310	14 x 30	X		X	X
MP80-2B-MX2500-CN-001	80	153	310	2.44	3000	765	310	16 x 35		X	X	
MP80-2B-MX2500-CB-001	80	153	310	2.44	3000	765	310	16 x 35		X	w/ BRAKE	
EP34-2A-MX2500-CN-001	82	153	48	2.44	3000	765	170	12.7 x 32		X	X	X
EP34-2B-MX2500-CN-001	82	153	310	2.44	3000	765	310	12.7 x 32		X	X	
MP110-2A-MX2500-CN-001	110	143	48	4	3000	1250	170	19x55		X		
MP110-2A-MX2500-CB-001	110	180	48	4	3000	1250	170	19x55		X	w/ BRAKE	
<b>OPTIONAL BRAKE</b>												
	Flange [mm]	Rated Torque [N-m]										
BPC017-21-003	42	0.1										
BPC023-24-027	57	0.5										
BPC023-24-026	57	0.8										
BPC024-24-002	60	1.5										
BPC034-24-003	82	1.7										

PART REVISION HISTORY					
REV.	DESCRIPTION	ECO	DWN	CHKD	DATE

- NOTES:
1. Kt AND Ke BASED PEAK SINE WAVE DRIVE
  2. 4 POLE DESIGN
  3. ZERO COGGING
  4. OPTIONAL: HIGH SPEED WINDING, 15,000 RPM
  5. OPTIONAL: MULTI-TURN ABSOLUTE, BISS-C 17 BIT RESOLUTION, NO BATTERY REQUIRED



MOTOR PARAMETERS		
		MP24-2B
NOMINAL VOLTAGE	VDC	24
NO LOAD SPEED	RPM	4615
RATE SPEED	RPM	2875
RATED TORQUE	Nm	0.1
PEAK TORQUE	Nm	0.3
CONTINUOUS CURRENT	AMPS	2
PEAK CURRENT	AMPS	6
VOLTAGE CONSTANT, Ke	V/KRPM	5.2
TORQUE CONSTANT, Kt	Nm/A	.049
RESISTANCE	OHM	3.02
INDUCTANCE	mH	0.177
MOMENT OF INERTIA	gm-cm <sup>2</sup>	TBD
WEIGHT	kg	0.16

ENCODER WIRING		
POS	COLOR	FUNCTION
1	RED	5 VDC
2	BLACK	COMMON
3	BROWN	CHANNEL A
4	WHITE	CHANNEL A/
5	BLUE	CHANNEL B
6	GREEN	CHANNEL B/
7	ORANGE	INDEX
8	YELLOW	INDEX /
9		
10		
11	VIOLET	CHANNEL U
12	WHT/BRN	CHANNEL V
13	WHT/ORG	CHANNEL W
14		
15	SHIELD	SHIELD

MOTOR CONNECTOR		
POS	COLOR	VALUE
1	RED	PHASE R
2	BLACK	PHASE S
3	WHITE	PHASE T
4		

ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	2500
INPUT VOLTAGE	5 +/- 5%
CURRENT	50 mA
MAX FREQ	500 KHz *

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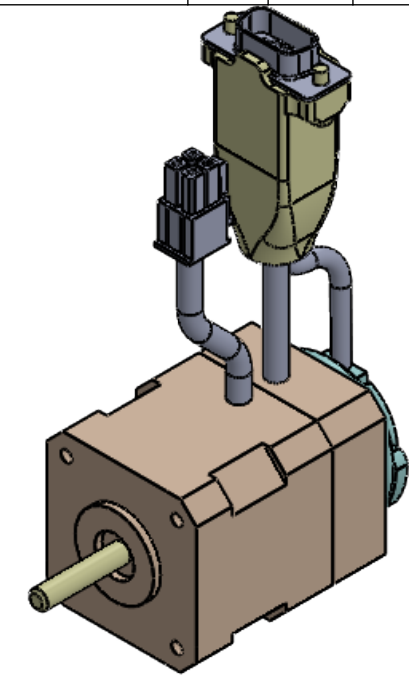
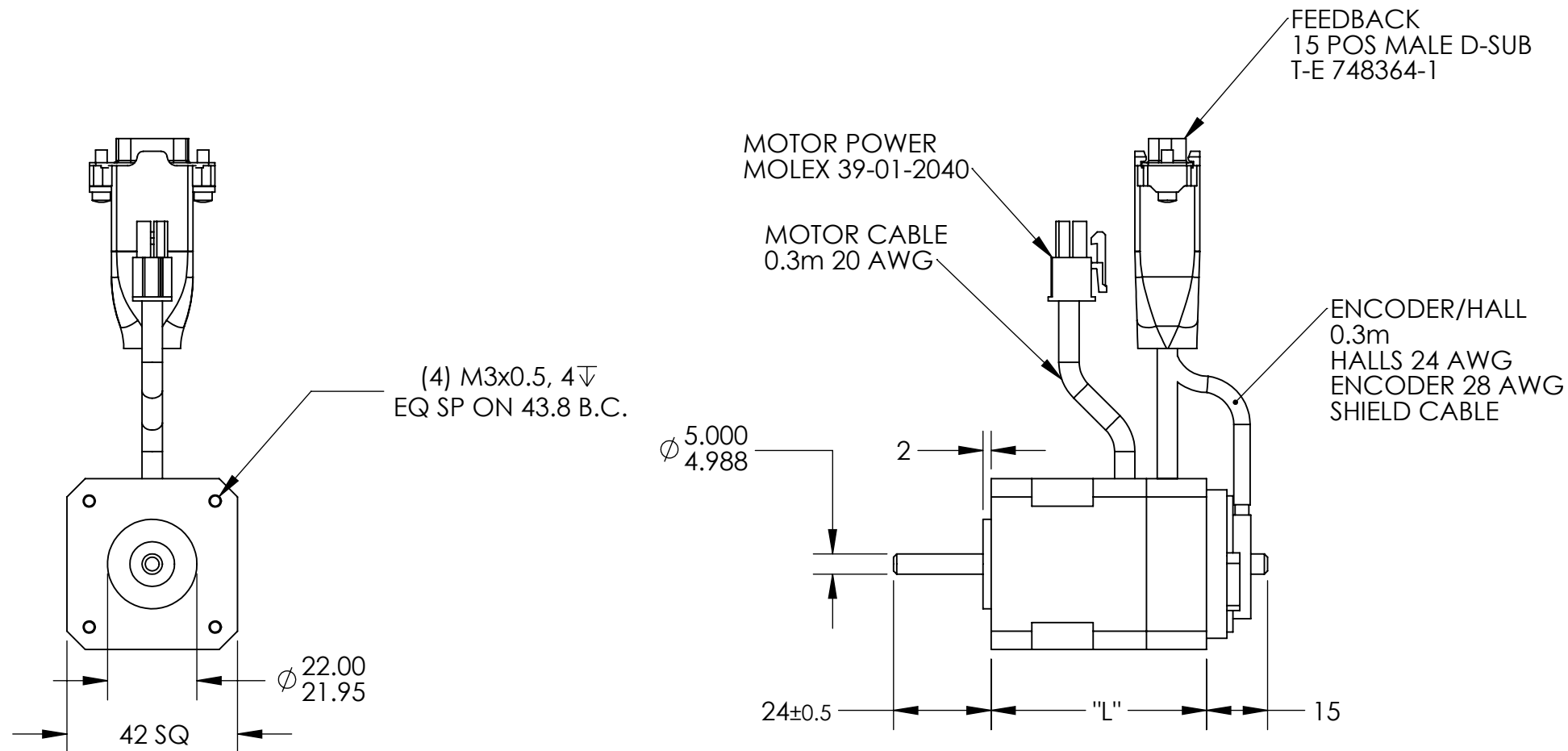
MATERIAL	TITLE:	BL MOTOR, 24mm, 24 VDC 2500 ppr ENCODER	
FINISH			
DRAWN	JPB	DATE	07/07/20
CHECKED	TPB	DATE	07/07/20
		SIZE	B
		THIRD ANGLE	
		PART NO.	MP24-2B-MX2500-NN-001
		PART REV.	A
		SCALE:	NONE
		SHEET	1 OF 1
		DWG. NO.	R

NOTES:

1. Kt AND Ke BASED ON PEAK SINE WAVE
2. 8 POLE DESIGN  
OPTIONAL MULTI-TURN ABSOLUTE ENCODER  
BISS-C OUTPUT, 17 BIT RESOLUTION, 16 BIT TURNS,  
NO BATTERY REQUIRED
3. OPTIONAL FAIL SAFE BRAKE, 0.1 N-m, 24 VDC  
ADD 49 mm TO "L"

PART REVISION HISTORY

REV.	DESCRIPTION	ECO	DWN	CHKD	DATE



MOTOR PARAMETERS		E017-1A	E017-2A	E017-3A
NOMINAL VOLTAGE	VDC	24	24	24
RATE SPEED	RPM	3000	3000	3000
RATED TORQUE	Nm	0.1	0.2	0.3
PEAK TORQUE	Nm	0.3	0.6	0.9
CONTINUOUS CURRENT	AMPS (RMS)	2.5	4.4	5.2
PEAK CURRENT	AMPS (RMS)	7.5	13.2	15.6
VOLTAGE CONSTANT, Ke	V/KRPM (RMS)	4.3	4.3	4.3
TORQUE CONSTANT, Kt	Nm/A (RMS)	.04	.04	.04
RESISTANCE	OHM	2.4	0.85	0.61
INDUCTANCE	mH	1.35	0.63	0.38
MOMENT OF INERTIA	Kg-cm <sup>2</sup>	.042	.084	.126
"L" LENGTH	mm	53	72	90
WEIGHT	Kg	0.36	0.5	0.6

FEEDBACK		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Brown	Chl A
4	White	Chl A/
5	Blue	Chl B
6	Green	Chl B/
7	Orange	Index
8	Yellow	Index/
9	Red	Hall 5 vdc
10	Black	Hall GND
11	Yellow	Hall A
12	Green	Hall B
13	Blue	Hall C
14		
15	Shield	Shield

MOTOR CONNECTOR		
MOLEX 39-01-2040		
POS	COLOR	VALUE
1	YELLOW	PHASE R
2	GREEN	PHASE S
3	BLUE	PHASE T
4		

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**TOLERANCES UNLESS OTHERWISE SPECIFIED (U.O.S.)**  
 DECIMALS .XX = ± .01  
 .XXX = ± .005  
 .XXXX = ± .0005  
 C'BREAKS .010/.020  
 FILLETS .020 MAX  
 FRAC. 1/64  
 MACH. FIN. 125  
 ANGLES 1°



TITLE: BL MOTOR, NEMA17, 24 VDC  
5000 PPR

DRAWN: JPB DATE: 02/08/22 SIZE: B THIRD ANGLE PART NO.: E017 -XA-MX5000-NN-001 PART REV.: A

CHECKED: TPB DATE: 02/08/22 SCALE: NONE SHEET 1 OF 1 DWG. NO.: R

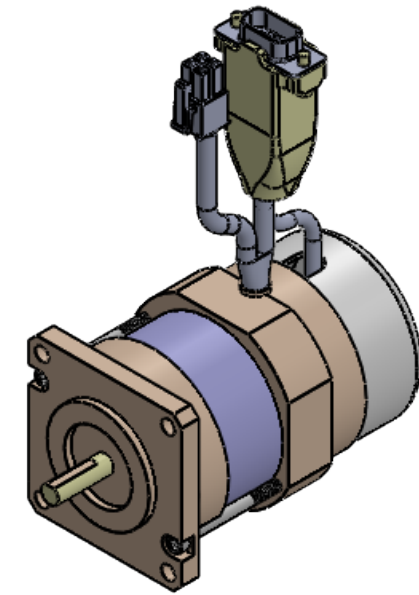
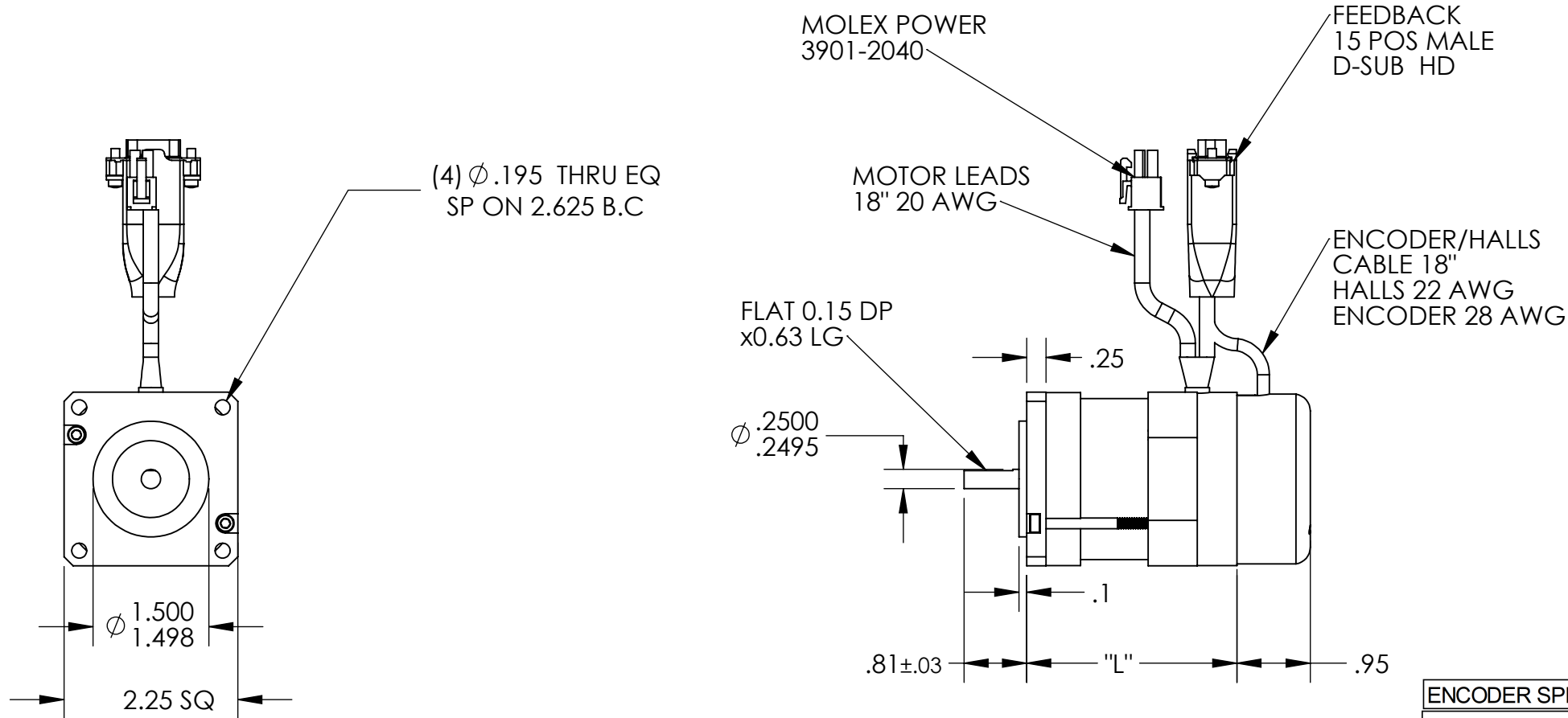


NOTES:

1. Kt AND Ke BASED ON PEAK SINE WAVE
2. 4 POLE DESIGN
3. OPTIONAL MULTI-TURN ABSOLUTE ENCODER  
BISS-C OUTPUT, 17 BIT RESOLUTION, 16 BIT TURNS,  
NO BATTERY REQUIRED
4. OPTIONAL 0.8 N-m FAIL SAFE BRAKE, 24 VDC  
ADD 2.24" TO "L"

PART REVISION HISTORY

REV.	DESCRIPTION	ECO	DWN	CHKD	DATE



FEEDBACK		
T-E 748364-1		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Brown	Chl A
4	White	Chl A/
5	Blue	Chl B
6	Green	Chl B/
7	Orange	Index
8	Yellow	Index/
9	Red	Hall 5 vdc
10	Black	Hall GND
11	Brown	Hall A
12	Orange	Hall B
13	Yellow	Hall C
14		
15	Shield	Shield

ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	5000 LINE
GATED	A / B AT 90 DEGREE
INPUT VOLTAGE	5 VDC +/- 5%
CURRENT	65 mA TYPICAL

MOTOR PARAMETERS				
		EP23-1A	EP23-2A	EP23-3A
MAX TERMINAL VOLTAGE	VDC	170	170	170
RATED SPEED	RPM	6000	6000	6000
RATED TORQUE	Oz-In	50	90	110
PEAK TORQUE	Oz-In	150	270	330
CONTINUOUS CURRENT	AMPS	3.6	5.2	7
PEAK CURRENT	AMPS	10.8	15.5	21.1
VOLTAGE CONSTANT, Ke	V/KRPM	11.2	14.0	12.6
TORQUE CONSTANT, Kt	Oz-In/A	15.1	18.9	17.0
RESISTANCE	OHM	2.09	1.16	0.58
INDUCTANCE	mH	1.6	1.1	0.54
MOMENT OF INERTIA	Oz-In-Sec <sup>2</sup>	.0019	.0037	.0055
"L" LENGTH	INCH	2.8	3.8	4.8
WEIGHT	LBS	1.5	2.2	3

MOTOR CONNECTOR		
MOLEX 39-01-2040		
POS	COLOR	VALUE
1	RED	PHASE R
2	WHITE	PHASE S
3	BLUE	PHASE T
4	GREEN	CASE

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**TOLERANCES UNLESS OTHERWISE SPECIFIED (U.O.S.)**  
 DECIMALS .XX = ± .01  
 .XXX = ± .005  
 .XXXX = ± .0005  
 C'BREAKS .010/.020  
 FILLETS .020 MAX  
 FRAC. 1/64  
 ANGLES 1°  
 MACH. FIN. 125



TITLE: NEMA 23 BRUSHLESS DC MOTOR

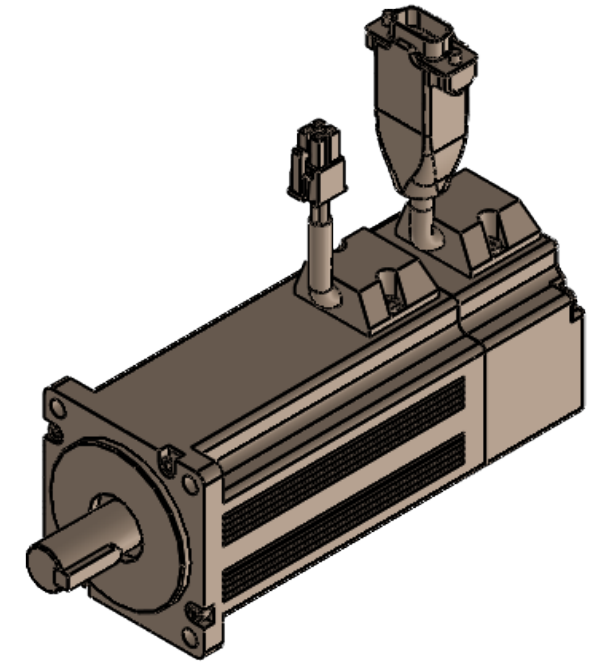
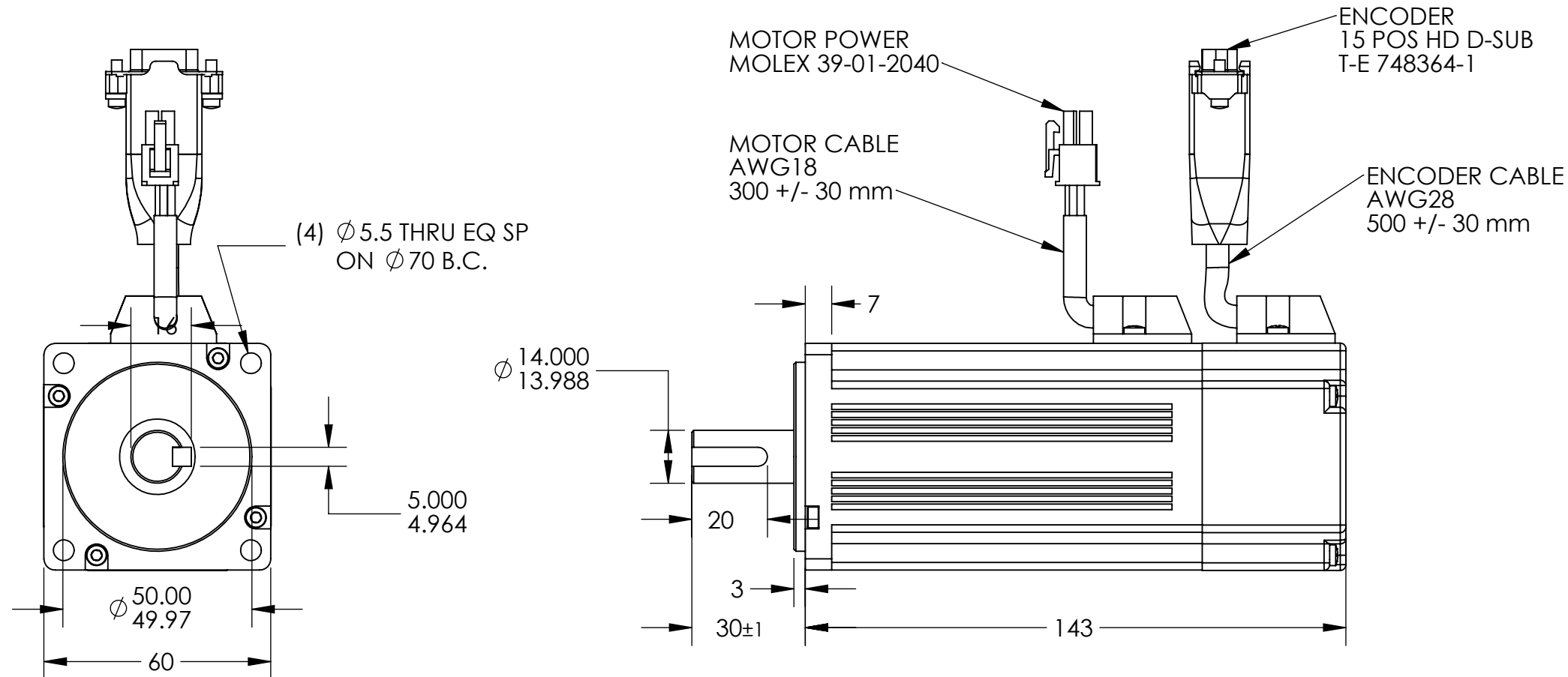
DRAWN	JPB	DATE	02/08/22	SIZE	B	PART NO.	EP23-XA-MX5000-CN-001	PART REV.	A
CHECKED	TPB	DATE	02/08/22	SCALE:	NONE	SHEET	1 OF 1	DWG. NO.	R

NOTES:

1. K<sub>t</sub> AND K<sub>e</sub> BASED ON PEAK SINUSOIDAL DRIVE
2. 8 POLE DESIGN
3. OPTION 1.5 N-m FAIL SAFE BRAKE, 24 VDC, ADD 70 MM TO LENGTH

PART REVISION HISTORY

REV.	DESCRIPTION	ECO	DWN	CHKD	DATE



ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	5000
GATED	A / B AT 90 DEGREE
INPUT VOLTAGE	5 VDC +/- 5%
CURRENT	55 mA TYPICAL

Motor leads		
Pin	Color	Function
1	Yellow	Phase U
2	Green	Phase V
3	Blue	Phase W
4	GRN/YEL	CASE

MOTOR PARAMETERS				
		MP60-3A	MP60-3B	MP60-3C
SUPPLY VOLTAGE	VDC	48	72	160
RATE SPEED	RPM	4000	4000	3000
RATED STALL TORQUE	N-m	1.3	1.3	1.3
POWER @ RATED SPEED	WATTS	400	400	400
PEAK TORQUE	N-m	4.1	4.1	3.9
CONTINUOUS CURRENT RMS	AMPS	12.7	7.6	3.4
PEAK CURRENT RMS	AMPS	24.5	22.8	10
VOLTAGE CONSTANT, K <sub>e</sub> rms	V/KRPM	7.8	13	30
TORQUE CONSTANT, K <sub>t</sub> rms	N-m/A	.0745	.124	0.38
RESISTANCE	OHM	.28	0.44	4.1
INDUCTANCE	mH	.33	0.48	4
MOMENT OF INERTIA	Kg-cm <sup>2</sup>	0.29	0.29	0.29
INSULATION CLASS		F	F	F

FEEDBACK		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Brown	Chl A
4	White	Chl A/
5	Blue	Chl B
6	Green	Chl B/
7	Orange	Index
8	Yellow	Index/
9		
10		
11	Violet	COMM A
12	WHT/BRN	COMM B
13	WHT/ORG	COMM C
14		
15	Shield	Shield

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**TOLERANCES UNLESS OTHERWISE SPECIFIED (U.O.S.)**  
 DECIMALS .XX = ± .01  
 .XXX = ± .005  
 .XXXX = ± .0005  
 C'BREAKS .010/.020  
 FILLETS 1/64  
 .020 MAX  
 FRAC. 1/64  
 MACH. FIN. 125/  
 ANGLES 1°

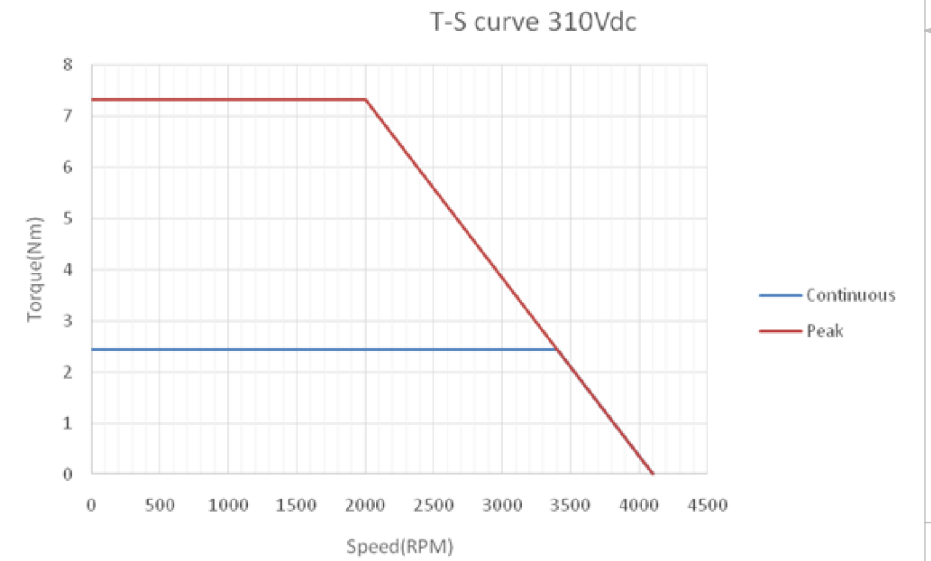
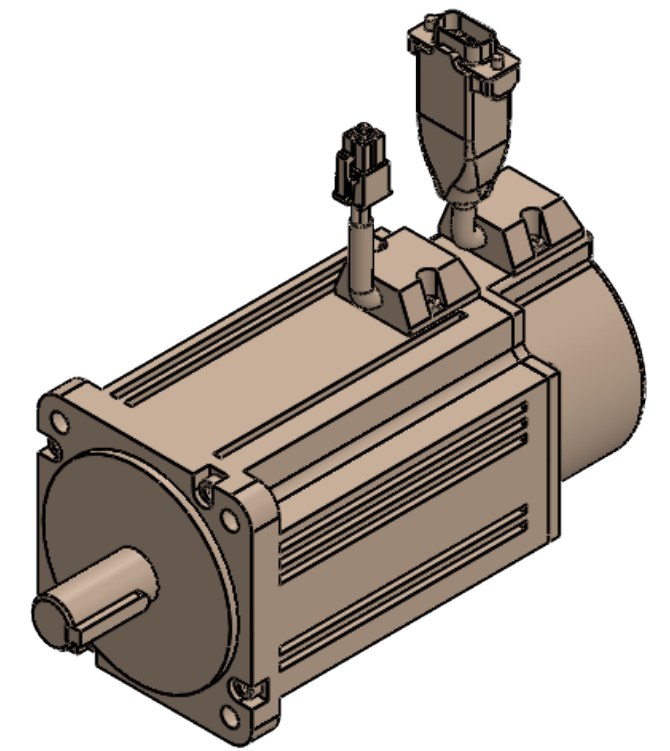
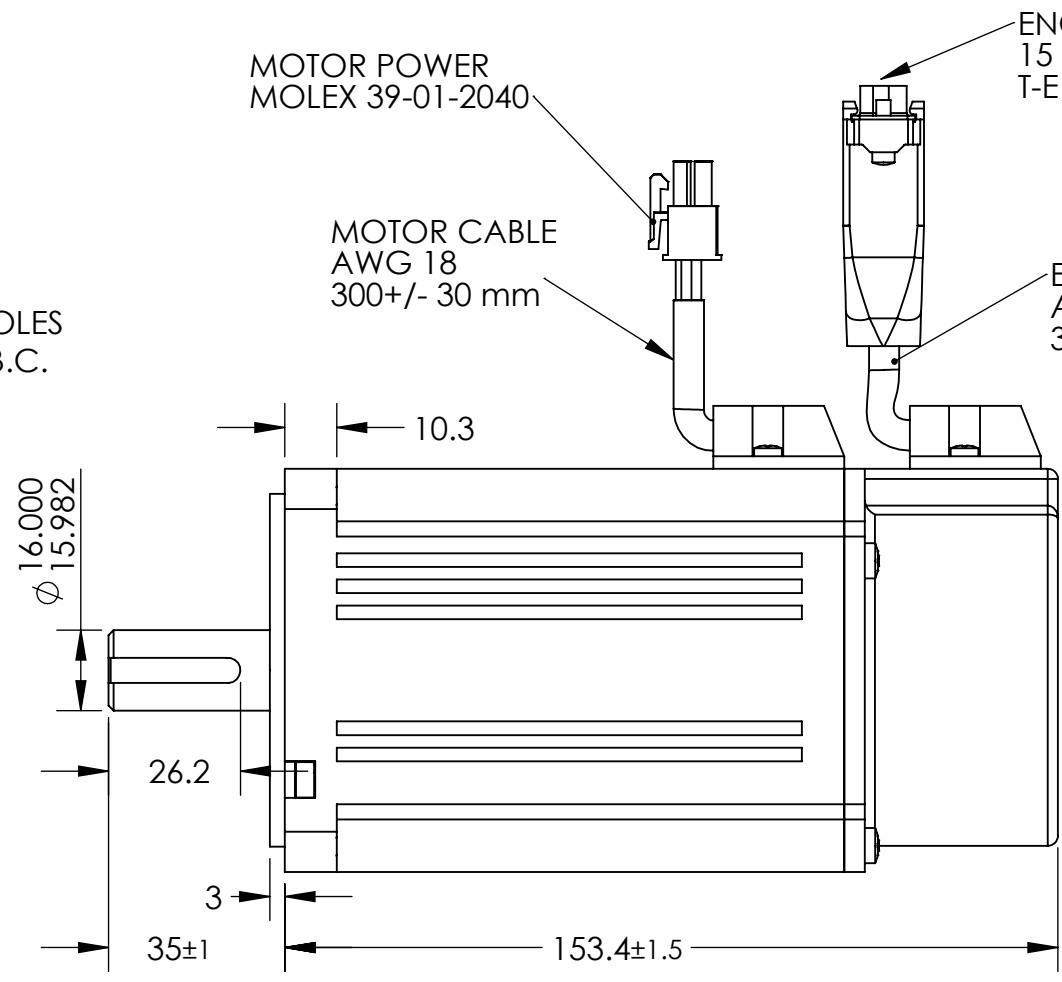
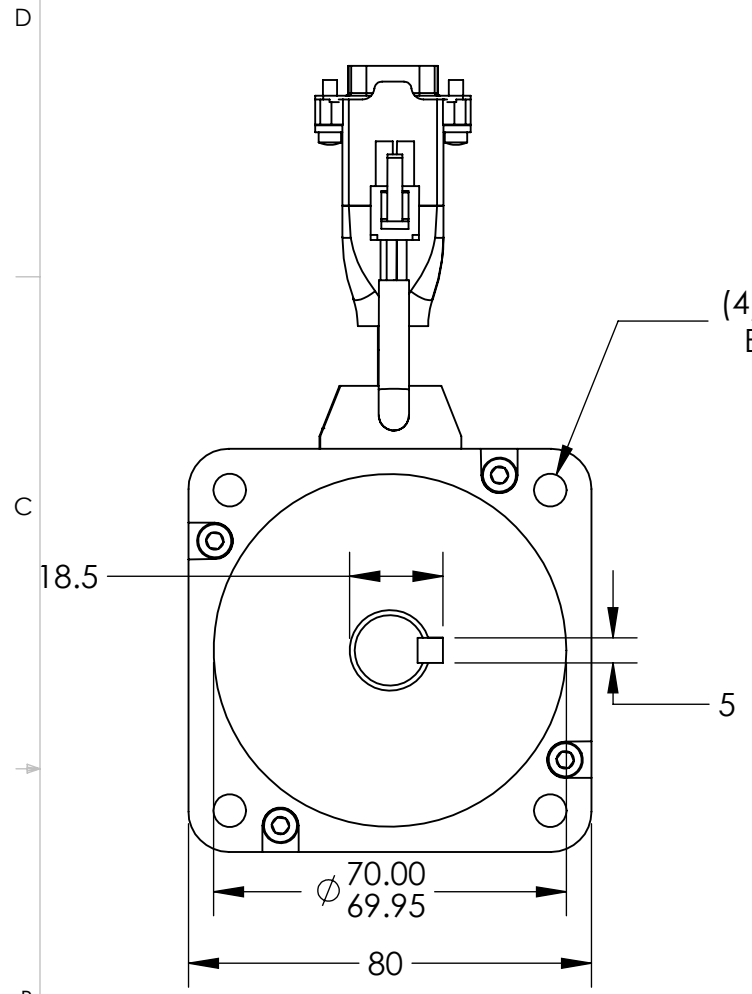


TITLE: BL MOTOR, 60 mm,  
5000 ppr

DRAWN	JPB	DATE	06/30/22	SIZE	B	PART NO.	MP60-3x-MX5000-CN-001	PART REV.	A
CHECKED	TPB	DATE	06/30/22	SCALE:	NONE	SHEET 1 OF 1	DWG.NO.	R	

- NOTES:  
 1.  $K_t$  AND  $K_e$  BASED ON RMS SINUSOIDAL DRIVE  
 2. 8 POLE DESIGN

PART REVISION HISTORY					
REV.	DESCRIPTION	ECO	DWN	CHKD	DATE



MOTOR PARAMETERS		
		MP80-2B
MAX BUS VOLTAGE	VDC	310
RATE SPEED	RPM	3000
RATED TORQUE @ 3000 RPM	N-m	2.44
POWER @ RATED SPEED	WATTS	765
PEAK TORQUE	N-m	7.2
CONTINUOUS CURRENT 0-p	AMPS	3
PEAK CURRENT 0-p	AMPS	9
VOLTAGE CONSTANT, $K_e$ rms	V/KRPM	43
TORQUE CONSTANT, $K_t$ rms	N-m/A	0.411
RESISTANCE	OHM	2.4
INDUCTANCE	mH	6.5
MOMENT OF INERTIA	Kg-cm <sup>2</sup>	1.45
INSULATION CLASS		F
WEIGHT	Kg	2.8

FEEDBACK		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Blue	Chl A
4	BLU/BLK	Chl A/
5	Green	Chl B
6	GRN/BLK	Chl B/
7	Yellow	Index
8	YEL/BLK	Index/
9		
10	Brown	
11	White	COMM A
12	Gray	COMM B
13	WHT/ORG	COMM C
14		
15	Shield	Shield

ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	2500
GATED	A / B AT 90 DEDREE
INPUT VOLTAGE	5 VDC +/- 5%
CURRENT	55 mA TYPICAL

Motor leads		
Pin	Color	Function
1	Yellow	Phase U
2	Green	Phase V
3	Blue	Phase W
4	GRN/YEL	CASE

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TOLERANCES UNLESS OTHERWISE SPECIFIED (U.O.S.)			
DECIMALS	C'BREAKS	FRAC.	MACH. FIN.
.XX = ± .01	.010/.020	1/64	125 /
.XXX = ± .005	FILLETS	ANGLES	1°
.XXXX = ± .0005	.020 MAX		



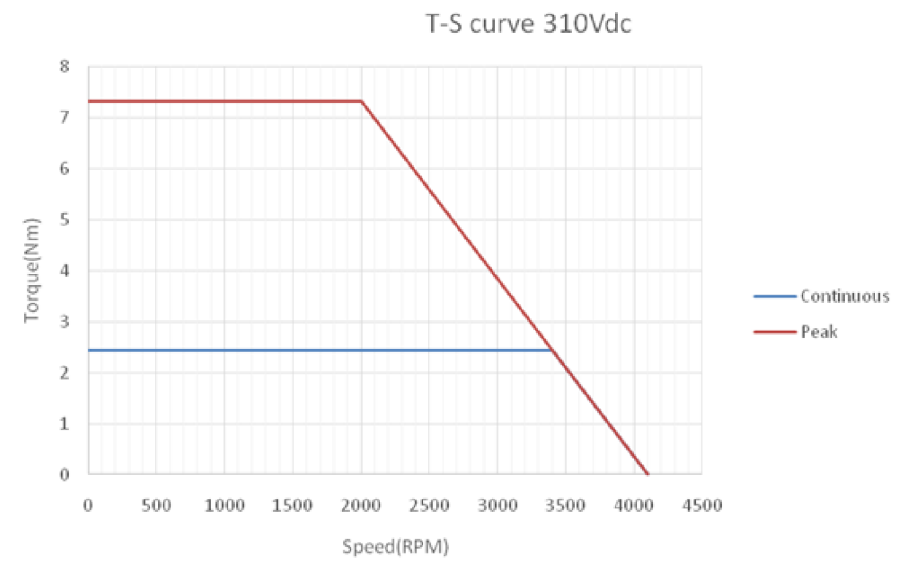
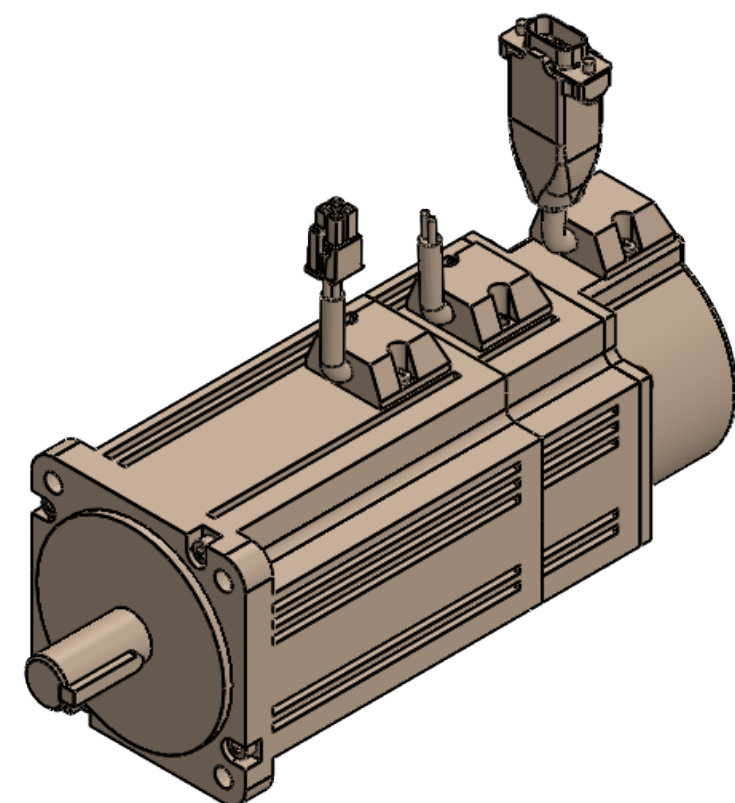
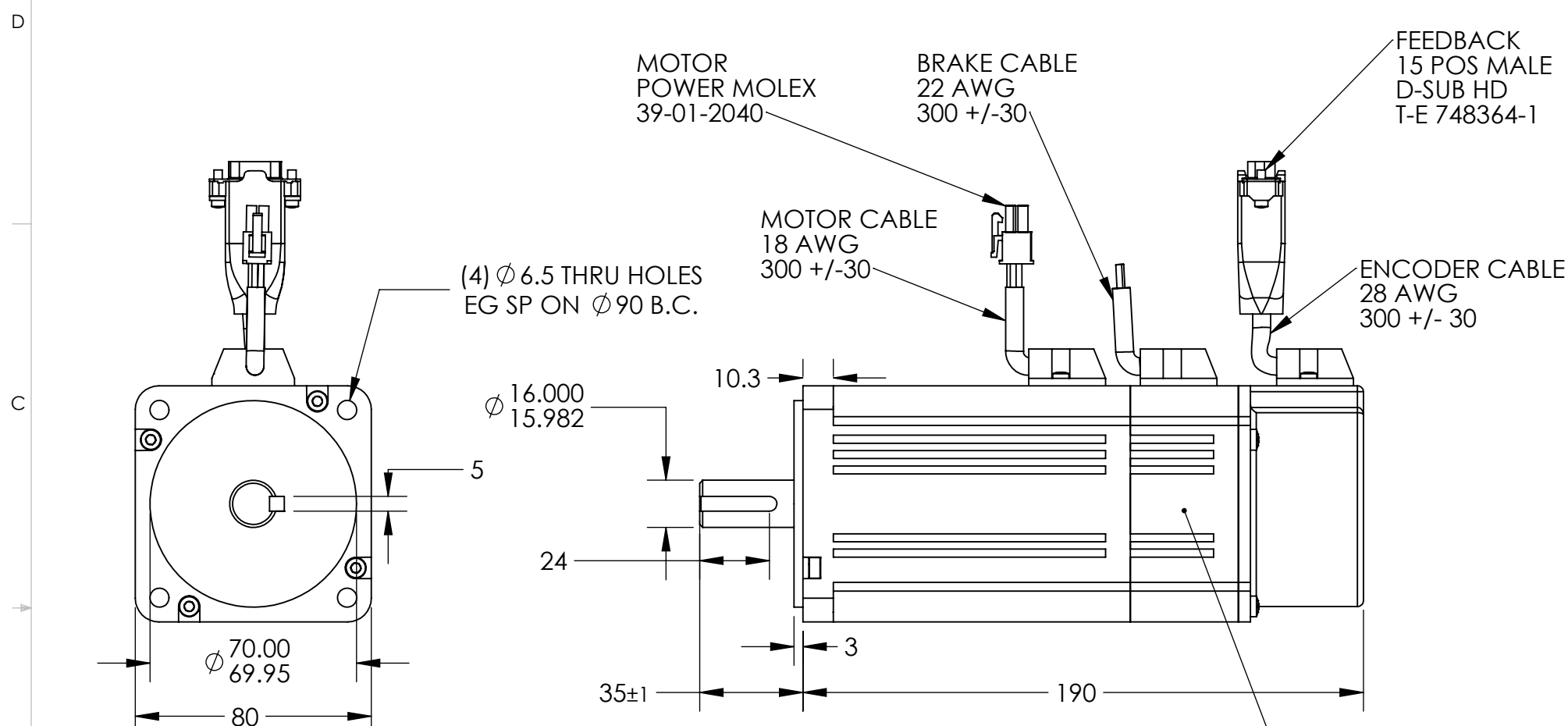
TITLE: BL MOTOR, 80 MM, 310 VDC  
2500 PPR

DRAWN	JPB	DATE	02/10/22	SIZE	B	PART NO.	MP80-2B-MX2500-CN-001	PART REV.	A
CHECKED	TPB	DATE	02/10/22	SCALE:	NONE	SHEET 1 OF 1	DWG.NO.	R	



- NOTES:  
 1. Kt AND Ke BASED ON RMS SINUSOIDAL DRVE  
 2. 8 POLE DESIGN

PART REVISION HISTORY					
REV.	DESCRIPTION	ECO	DWN	CHKD	DATE



BRAKE 2.5 N-m, 24 vdc  
 350 mA

MOTOR PARAMETERS		
		MP80-2B
MAX BUS VOLTAGE	VDC	310
RATE SPEED	RPM	3000
RATED TORQUE @ 3000 RPM	N-m	2.44
POWER @ RATED SPEED	WATTS	765
PEAK TORQUE	N-m	7.2
CONTINUOUS CURRENT 0-p	AMPS	3
PEAK CURRENT 0-p	AMPS	9
VOLTAGE CONSTANT, Ke rms	V/KRPM	43
TORQUE CONSTANT, Kt rms	N-m/A	0.411
RESISTANCE	OHM	2.4
INDUCTANCE	mH	6.5
MOMENT OF INERTIA	Kg-cm2	1.45
INSULATION CLASS		F
WEIGHT	Kg	2.8

FEEDBACK		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Blue	Chl A
4	BLU/BLK	Chl A/
5	Green	Chl B
6	GRN/BLK	Chl B/
7	Yellow	Index
8	YEL/BLK	Index/
9		
10	Brown	
11	White	COMM A
12	Gray	COMM B
13	WHT/ORG	COMM C
14		
15	Shield	Shield

ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	2500
GATED	A / B AT 90 DEDREE
INPUT VOLTAGE	5 VDC +/- 5%
CURRENT	55 mA TYPICAL

Motor leads		
Pin	Color	Function
1	Yellow	Phase U
2	Green	Phase V
3	Blue	Phase W
4	YEL/GRN	CASE

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TOLERANCES UNLESS OTHERWISE SPECIFIED (U.O.S.)			
DECIMALS	C'BREAKS	FRAC.	MACH. FIN.
.XX ± .01	.010/.020	1/64	125
.XXX ± .005	FILLETS	ANGLES	
.XXXX ± .0005	.020 MAX	1°	



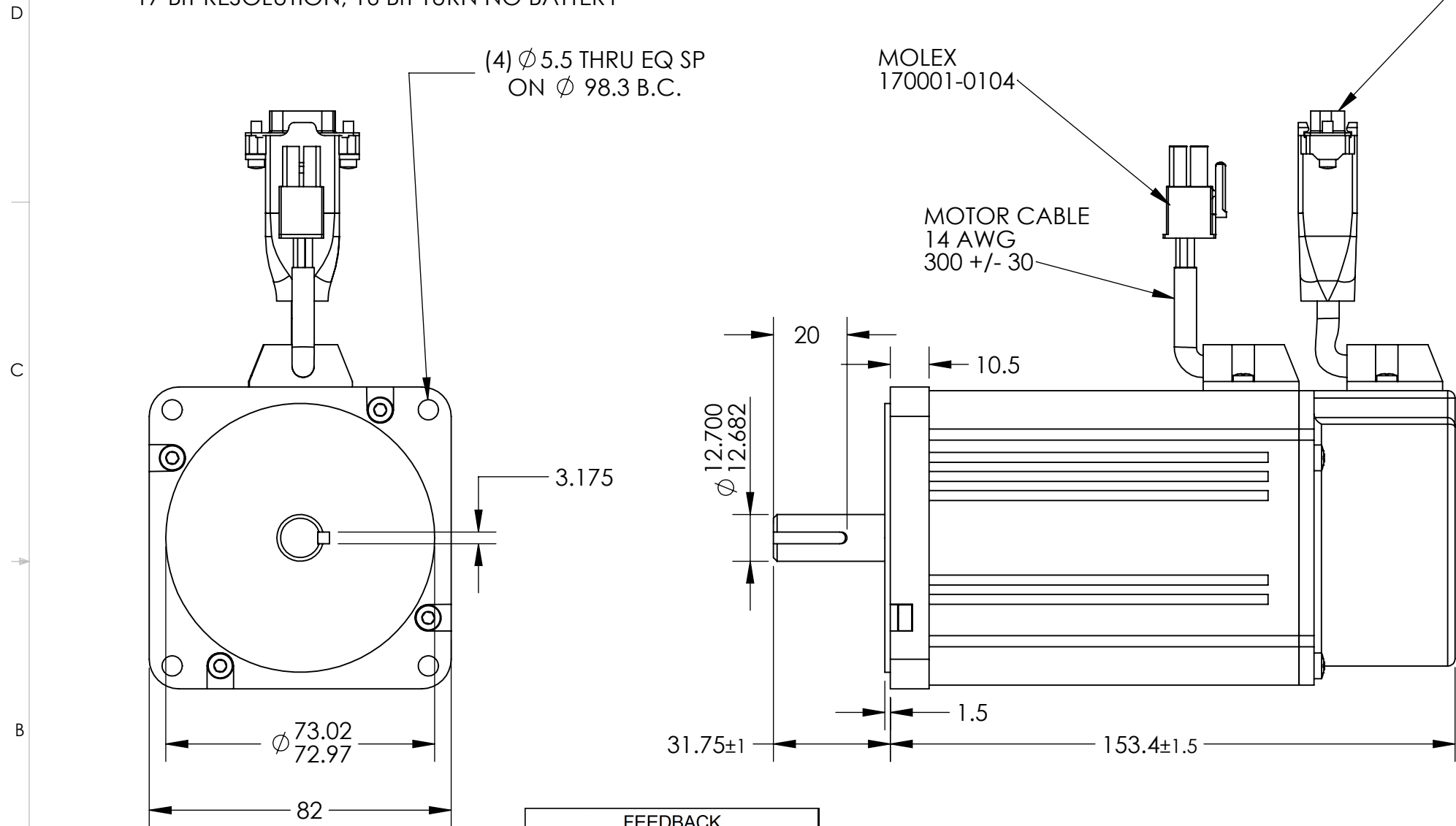
TITLE: BL MOTOR/BRAKE, 80 MM, 310 VDC  
 2500 PPR ENCODER

DRAWN	JPB	DATE	02/10/22	SIZE	B	PART NO.	MP80-2B-MX2500-CB-001	PART REV.	A
CHECKED	TPB	DATE	02/10/22	SCALE:	NONE	SHEET 1 OF 1	DWG.NO.	R	



- NOTES:
1.  $K_t$  AND  $K_e$  BASED ON RMS SINE WAVE DRIVE
  2. 8 POLE DESIGN
  3. OPTION 1.7 N-m FAIL SAFE BRAKE
  4. OPTIONAL MULTI-TURN ABSOLUTE BISS-C  
17 BIT RESOLUTION, 16 BIT TURN NO BATTERY

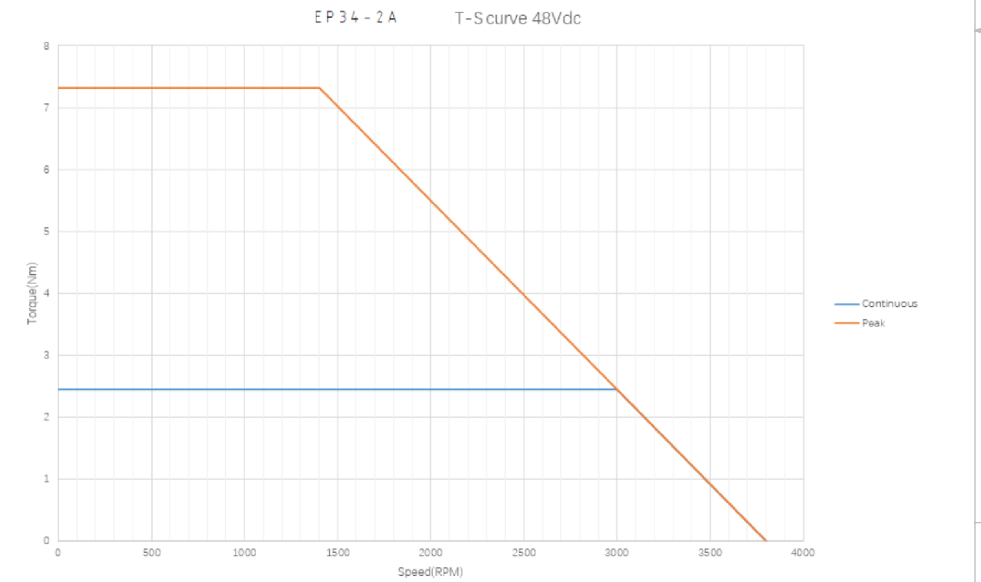
PART REVISION HISTORY					
REV.	DESCRIPTION	ECO	DWN	CHKD	DATE



FEEDBACK  
15 POS MALE  
D-SUB HD  
T-E 748364-1

MOLEX  
170001-0104

MOTOR CABLE  
14 AWG  
300 +/- 30



MOTOR PARAMETERS		
		EP80-2A
BUS VOLTAGE	VDC	48
RATE SPEED	RPM	3000
RATED TORQUE @ 3000 RPM	N-m	2.44
POWER @ RATED SPEED	WATTS	765
PEAK TORQUE	N-m	7.2
CONTINUOUS CURRENT 0-p	AMPS	21
PEAK CURRENT 0-p	AMPS	63
VOLTAGE CONSTANT, $K_e$ rms	V/KRPM	8.5
TORQUE CONSTANT, $K_t$ rms	N-m/A	0.116
RESISTANCE	OHM	0.12
INDUCTANCE	mH	0.27
MOMENT OF INERTIA	Kg-cm <sup>2</sup>	1.45
INSULATION CLASS		F
WEIGHT	Kg	2.8

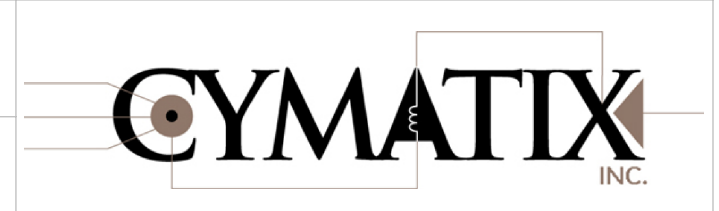
FEEDBACK		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Brown	Chl A
4	White	Chl A/
5	Blue	Chl B
6	Green	Chl B/
7	Orange	Index
8	Yellow	Index/
9		
10		
11	Violet	COMM A
12	WHT/BRN	COMM B
13	WHT/ORG	COMM C
14		
15	Shield	Shield

Motor leads MOLEX 170001-0104		
Pin	Color	Function
1	Yellow	Phase U
2	Green	Phase V
3	Blue	Phase W
4		

ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	2500
GATED	A / B AT 90 DEGREE
INPUT VOLTAGE	5 VDC +/- 5%
CURRENT	55 mA TYPICAL

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TOLERANCES UNLESS OTHERWISE SPECIFIED (U.O.S.)			
DECIMALS	C'BREAKS	FRAC.	MACH. FIN.
.XX = ± .01	.010/.020	1/64	125
.XXX = ± .005	FILLETS	ANGLES	
.XXXX = ± .0005	.020 MAX	1°	



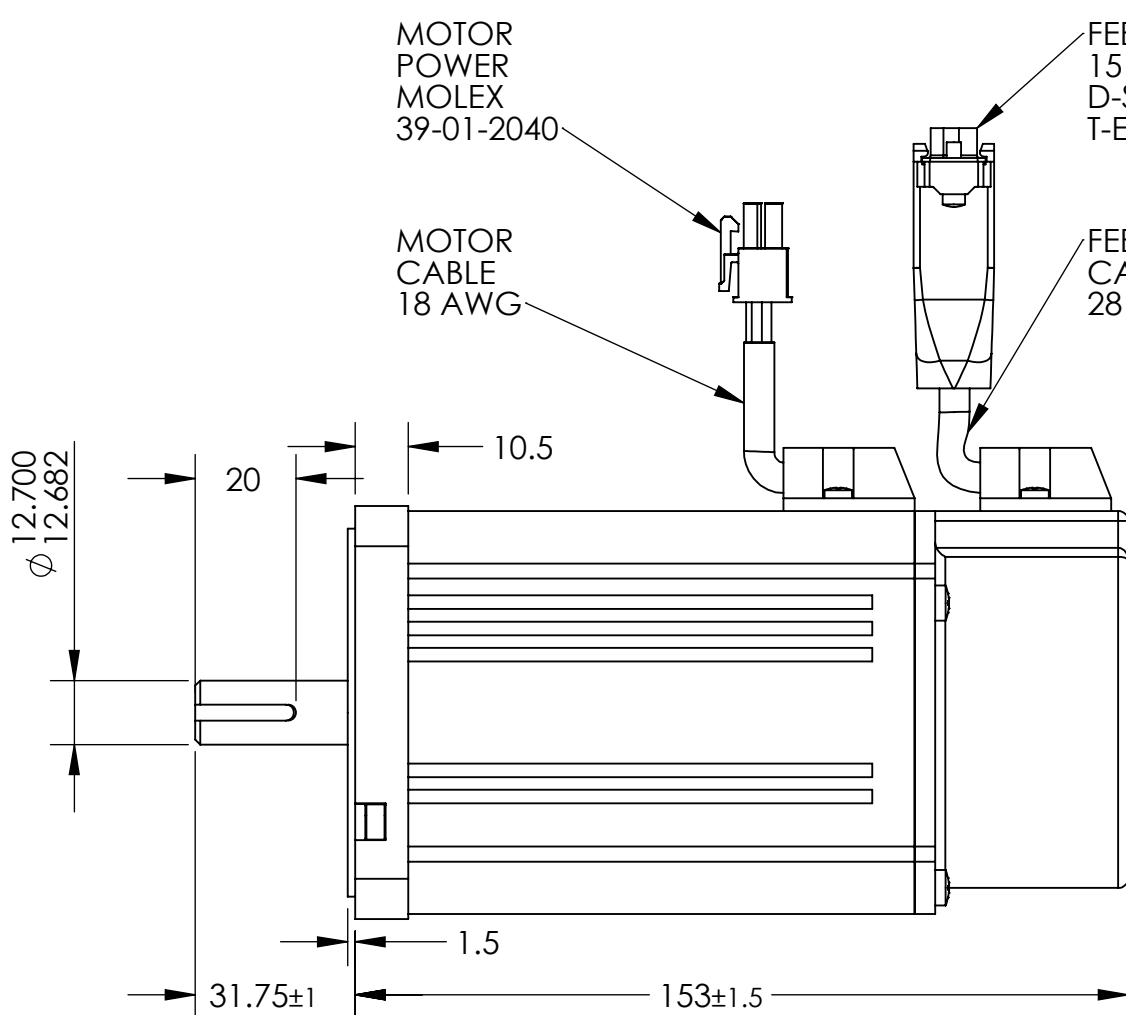
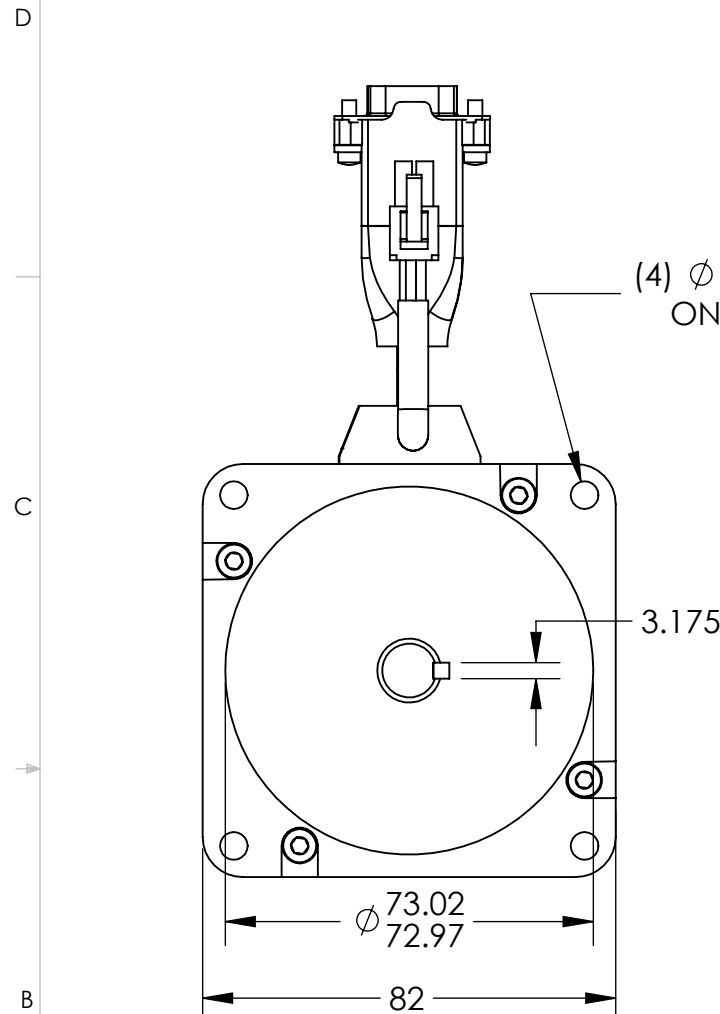
MATERIAL	
FINISH	
DRAWN	JPB
CHECKED	TPB
DATE	10/21/21

TITLE:	BL MOTOR, NEMA 34, 48 VDC, 2500 PPR
PART NO.	EP34-2A-MX2500-CN-001
DWG.NO.	R
SCALE:	NONE
SHEET	1 OF 1
SIZE	B
THIRD ANGLE	
PART REV.	B

- NOTES:
1. Kt AND Ke BASED ON RM SINE WAVE DRIVE
  2. 8 POLE DESIGN
  3. OPTIONAL 1.7 N-m FAIL SAFE BRAKE 24 vdc  
ADD 231 MM LENGTH

PART REVISION HISTORY

REV.	DESCRIPTION	ECO	DWN	CHKD	DATE

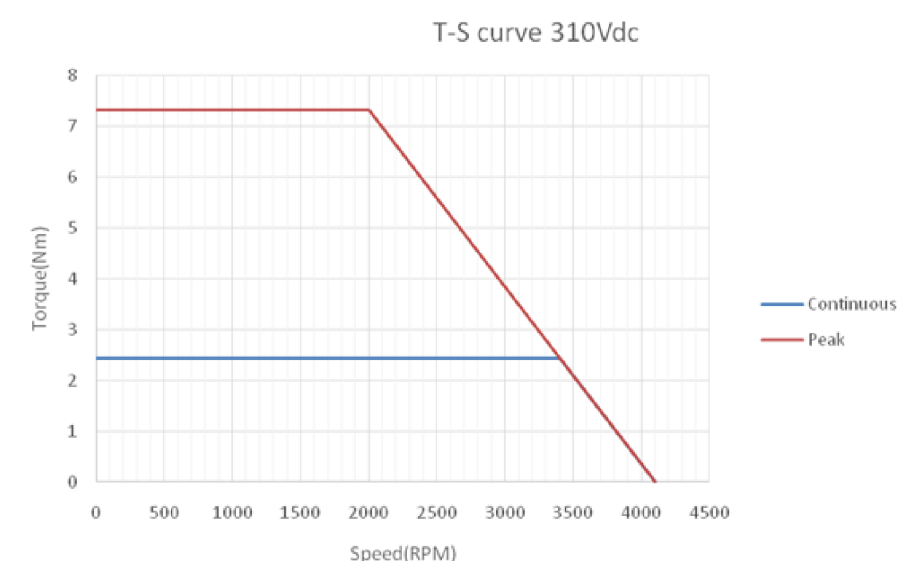
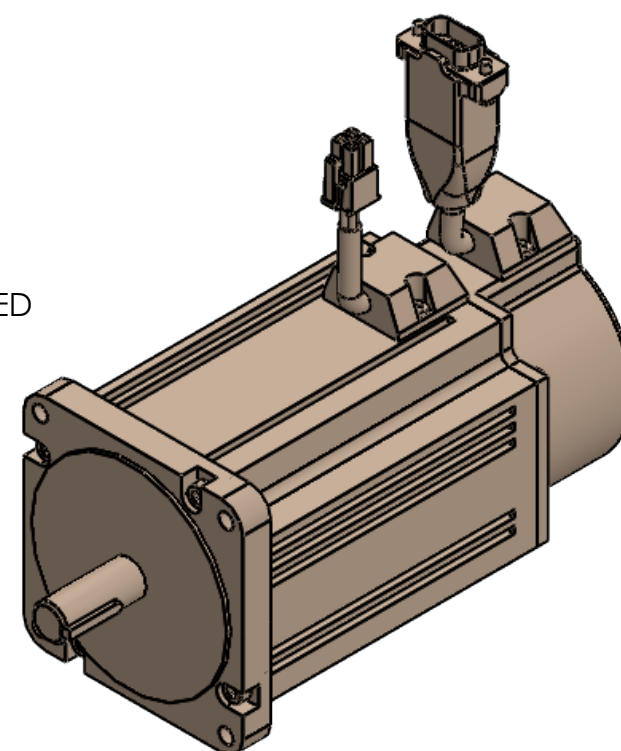


MOTOR POWER MOLEX 39-01-2040

MOTOR CABLE 18 AWG

FEEDBACK 15 POS MALE D-SUB HD T-E 748364-1

FEEDBACK CABLE SHIELDED 28 AWG



MOTOR PARAMETERS		
		EP80-2B
BUS VOLTAGE	VDC	310
RATE SPEED	RPM	3000
RATED TORQUE @ 3000 RPM	N-m	2.44
POWER @ RATED SPEED	WATTS	765
PEAK TORQUE	N-m	7.2
CONTINUOUS CURRENT 0-p	AMPS	3
PEAK CURRENT 0-p	AMPS	9
VOLTAGE CONSTANT, Ke rms	V/KRPM	43
TORQUE CONSTANT, Kt rms	N-m/A	0.411
RESISTANCE	OHM	2.4
INDUCTANCE	mH	6.5
MOMENT OF INERTIA	Kg-cm2	1.45
INSULATION CLASS		F
WEIGHT	Kg	2.8

FEEDBACK		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Blue	Chl A
4	BLU/BLK	Chl A/
5	Green	Chl B
6	GRN/BLK	Chl B/
7	Yellow	Index
8	YEL/BLK	Index/
9		
10		
11	Brown	COMM A
12	White	COMM B
13	Gray	COMM C
14		
15	Shield	Shield

Motor leads		
Molex 39-01-2040		
Pin	Color	Function
1	Yellow	Phase U
2	Green	Phase V
3	Blue	Phase W
4	YEL/GRN	CASE

ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	2500
GATED	A / B AT 90 DEDREE
INPUT VOLTAGE	5 VDC +/- 5%
CURRENT	55 mA TYPICAL

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**TOLERANCES UNLESS OTHERWISE SPECIFIED (U.O.S.)**

DECIMALS	C'BREAKS	FRAC.	MACH. FIN.
.XX = ± .01	.010/.020	1/64	125
.XXX = ± .005	FILLETS	ANGLES	
.XXXX = ± .0005	.020 MAX	1°	



MATERIAL

FINISH

DRAWN JPB DATE 10/13/21

CHECKED TPB DATE 10/13/21

SIZE B

THIRD ANGLE

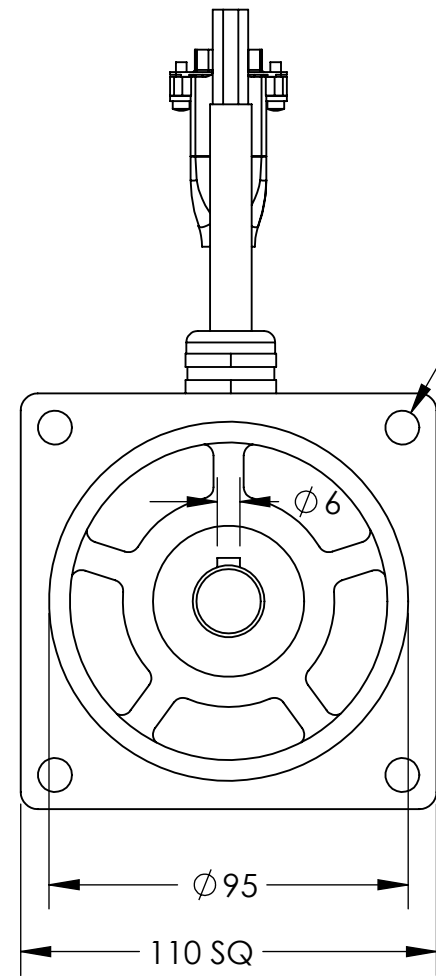
TITLE: BL MOTOR, NEMA 34, 310 VDC 2500 PPR

PART NO. EP34-2B-BX2500-CN-001

SCALE: NONE SHEET 1 OF 1 DWG.NO. R

- NOTE:  
 1. Kt AND Ke BASED ON RMS SINE WAVE DRIVE  
 2. 10 POLE DESIGN  
 3. HI-POT: 600 VAC, 1 SEC, 5 mA

PART REVISION HISTORY					
REV.	DESCRIPTION	ECO	DWN	CHKD	DATE



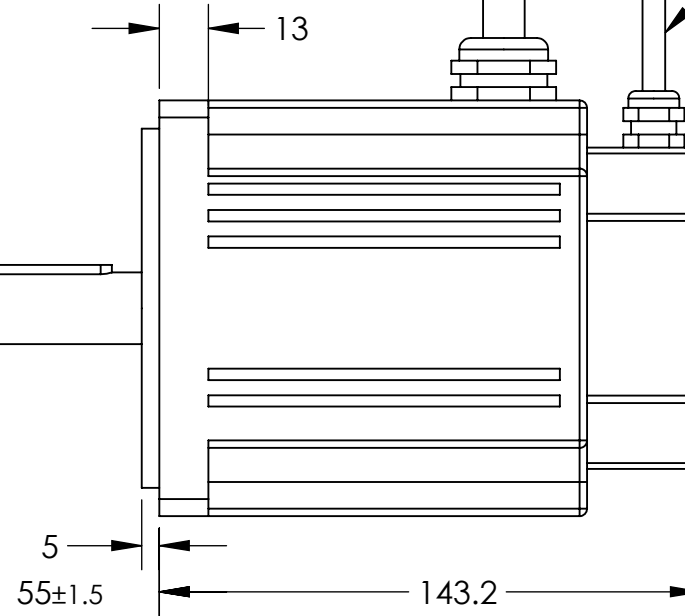
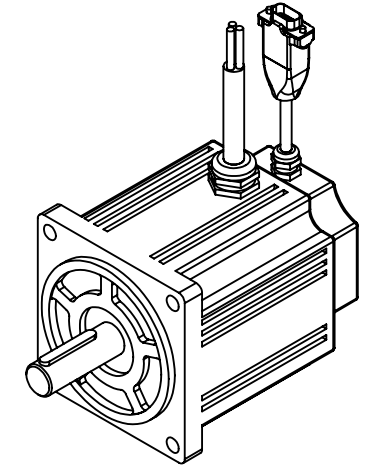
(4)  $\phi 9$  THRU HOLES EQ  
 SP ON 130 mm B.C.

$\phi 19.000$   
 $\phi 18.988$

MOTOR CABLE, 3X 16 AWG,  
 500 mm LONG

ENCODER CONNECTOR  
 AMP 748364-1  
 HD D-SUB MALE

ENCODER CABLE,  
 500 mm LONG  
 SHIELDED



MOTOR PARAMETERS		
Parameter	Unit	MP110-2A
SUPPLY VOLTAGE	VDC	48
RATE SPEED	RPM	3000
RATED TORQUE @ 3000 RPM	N-m	4
POWER @ RATED SPEED	WATTS	1257
PEAK TORQUE	N-m	12
CONTINUOUS CURRENT 0-p	AMPS	35
PEAK CURRENT 0-p	AMPS	105
VOLTAGE CONSTANT, Ke rms	V/KRPM	8.62
TORQUE CONSTANT, Kt rms	N-m/A	.114
RESISTANCE	OHM	0.041
INDUCTANCE	mH	.27
NUMBER OF POLES		10
WEIGHT	Kg	4.45

FEEDBACK		
AMP 748364-1		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Blue	Chl A
4	BLU/BLK	Chl A/
5	Green	Chl B
6	GRN/BLK	Chl B/
7	Yellow	Index
8	YeEL/BLK	Index/
9		
10	White	
11	Brown	COMM A
12	Gray	COMM B
13	WHT/ORG	COMM C
14		
15	Shield	Shield

ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	2500
GATED	A / B AT 90 DEDREE
INPUT VOLTAGE	5 VDC +/- 5%
CURRENT	60 mA TYPICAL

Motor leads	
Color	Function
Yellow	Phase U
Red	Phase V
Black	Phase W

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DECIMALS	C'BREAKS	FRAC.	MACH. FIN.
.XX = ± .01	.010/.020	1/64	125
.XXX = ± .005	FILLETS	ANGLES	
.XXXX = ± .0005	.020 MAX	1°	



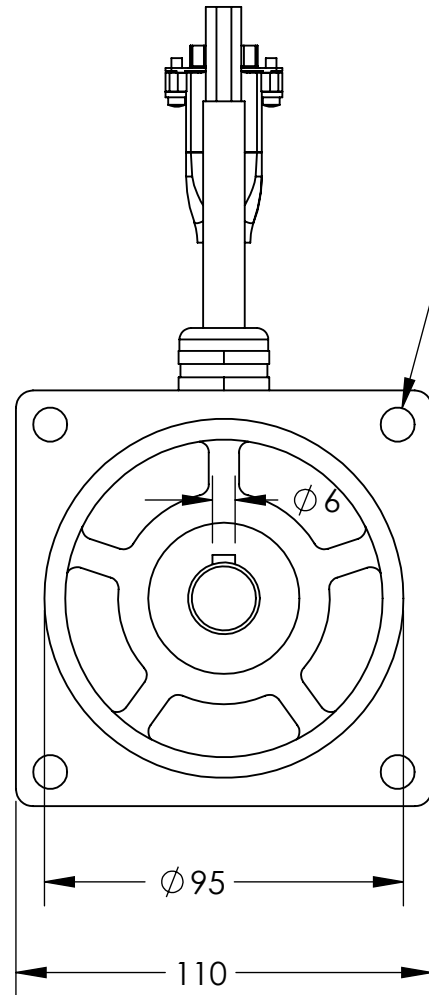
MATERIAL		FINISH		DRAWN JPB		DATE 01/02/25		SIZE B		PART NO. MP110-2A-MX2500-CN-001		PART REV. A	
TITLE: BL MOTOR, 110 MM, 48 VDC 2500 PPR		SCALE: NONE		SHEET 1 OF 1		DWG.NO. R							

NOTE:

1. Kt AND Ke BASED ON RMS SINE WAVE DRIVE
2. 10 POLE DESIGN
3. HI-POT MOTOR AND BRAKE: 600 VAC, 1SEC, 5 mA

PART REVISION HISTORY

REV.	DESCRIPTION	ECO	DWN	CHKD	DATE



(4)  $\phi 9$  THRU HOLES EQ SP ON  $\phi 130$  B.C.

$\phi 19.000$   
 $\phi 18.988$

40

5

55±1.5

13

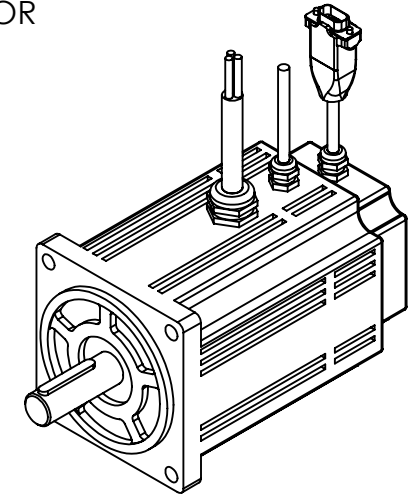
180

BRAKE CABLE  
500 mm LONG  
22 AWG

MOTOR CABLE, 3X 16 AWG  
500 mm LONG

ENCODER CONNECTOR  
AMP 748364-1  
HD D-SUB

ENCODER CABLE  
500 mm LONG  
SHIELDED



BRAKE NOTES:

1. RATED VOLTAGE: 24 VDC
2. RESISTANCE: 32.7 OHM
3. INSULATION CLASS: F
4. HOLDING TORQUE: 6 N-m MIN

MOTOR PARAMETERS		MP110-2A
SUPPLY VOLTAGE	VDC	48
RATE SPEED	RPM	3000
RATED TORQUE @ 3000 RPM	N-m	4
POWER @ RATED SPEED	WATTS	1257
PEAK TORQUE	N-m	12
CONTINUOUS CURRENT 0-p	AMPS	35
PEAK CURRENT 0-p	AMPS	105
VOLTAGE CONSTANT, Ke rms	V/KRPM	8.62
TORQUE CONSTANT, Kt rms	N-m/A	.114
RESISTANCE	OHM	0.041
INDUCTANCE	mH	.27
NUMBER OF POLES		10
WEIGHT	Kg	4.45

FEEDBACK AMP 748364-1		
Pin	Color	Function
1	Red	5 vdc
2	Black	GND
3	Blue	Chl A
4	BLU/BLK	Chl A/
5	Green	Chl B
6	GRN/BLK	Chl B/
7	Yellow	Index
8	YeEL/BLK	Index/
9		
10	White	
11	Brown	COMM A
12	Gray	COMM B
13	WHT/ORG	COMM C
14		
15	Shield	Shield

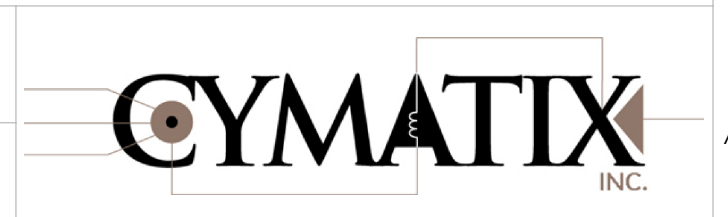
ENCODER SPECIFICATIONS	
TYPE	OPTICAL
OUTPUT TYPE	LINE DRIVER
LINE COUNT	2500
GATED	A / B AT 90 DEDREE
INPUT VOLTAGE	5 VDC +/- 5%
CURRENT	60 mA TYPICAL

Motor leads	
Color	Function
Yellow	Phase U
Red	Phase V
Black	Phase W

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**TOLERANCES UNLESS OTHERWISE SPECIFIED (U.O.S.)**

DECIMALS	C'BREAKS	FRAC.	MACH. FIN.
.XX = ± .01	.010/.020	1/64	125/
.XXX = ± .005	FILLETS	ANGLES	1°
.XXXX = ± .0005	.020 MAX		



MATERIAL

FINISH

DRAWN JPB

CHECKED

DATE 01/02/25

DATE

TITLE: BL MOTOR, 110 MM, 48 VDC  
2500 PPR

PART NO. MP110-2A-MX2500-CB-001

DWG.NO. R

SCALE: NONE

SHEET 1 OF 1

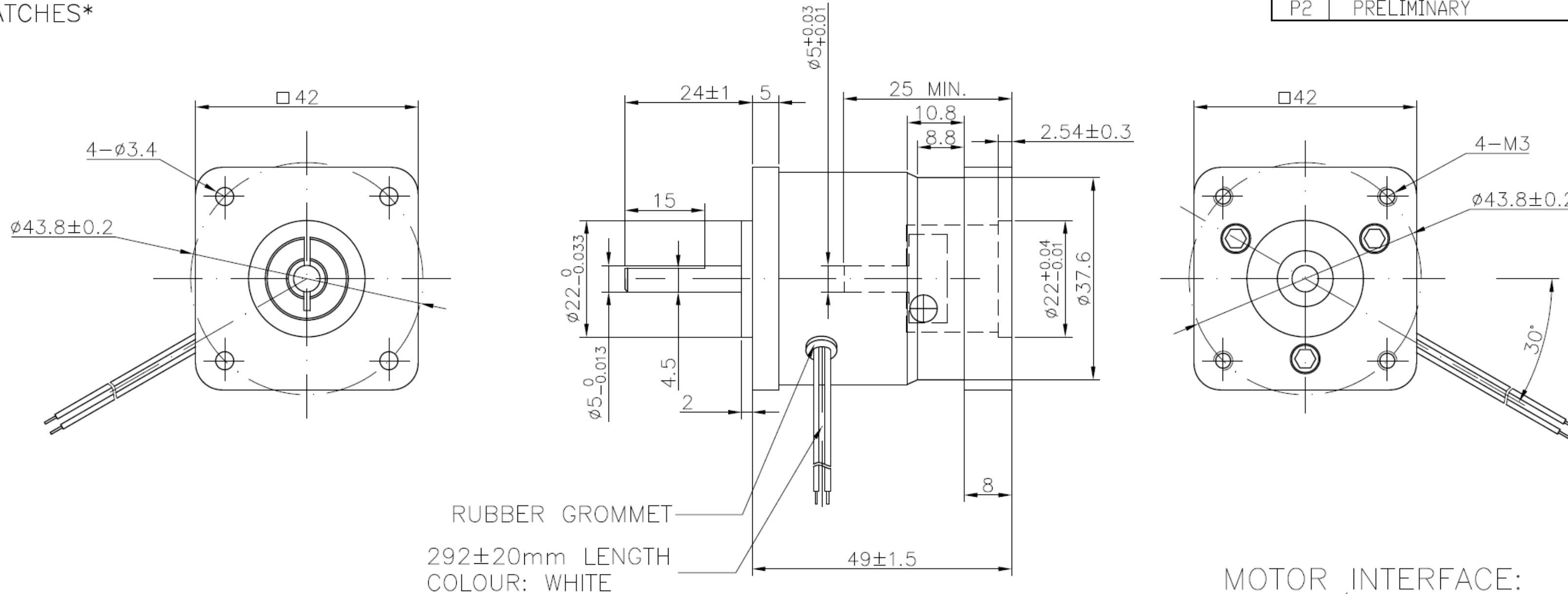
THIRD ANGLE

SIZE B



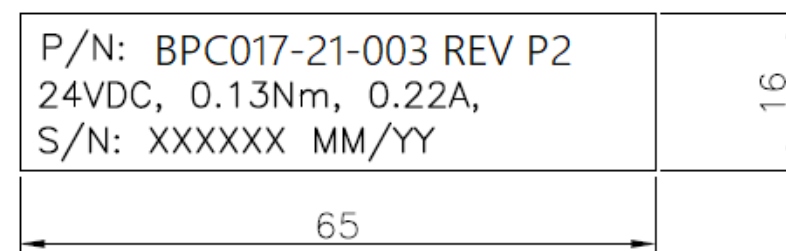
NOTES:  
 1.SURFACE QUALITY: NOT ALLOW DENTS AND SCRATCHES\*

REV	DESCRIPTION	DATE	APPROVE
P1	PRELIMINARY	16/06/06	XM
P2	PRELIMINARY	16/06/14	XM

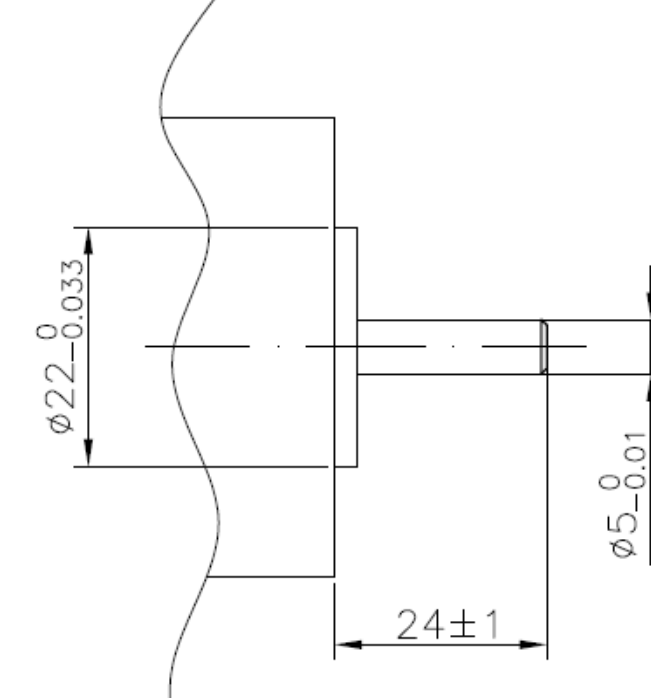


SPECIFICATION:

1. VOLTAGE:24VDC
2. STATIC TORQUE:0.113Nm
3. RATED CURRENT:0.22A
4. POWER:5.28W
5. RESISTENCE:100 Ohms
6. START VOLTAGE:15VDC MAX.
7. HI-POT: 500VAC/1S, 2mA
8. POWER OFF BRAKE



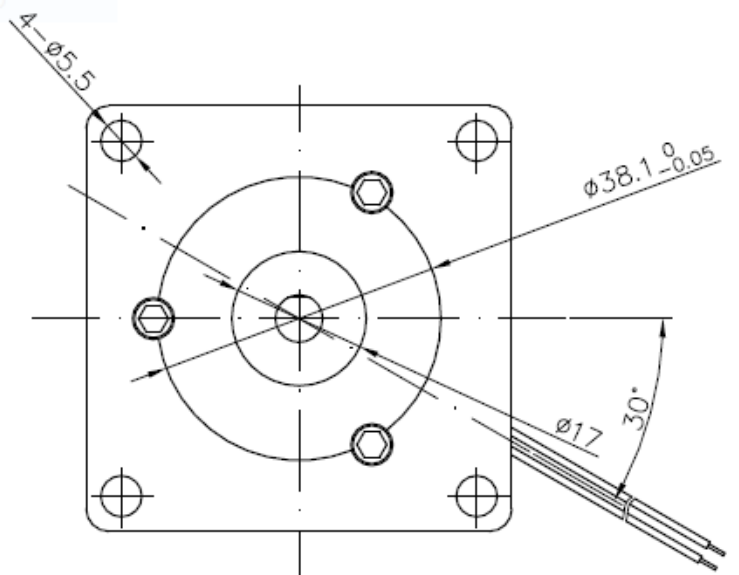
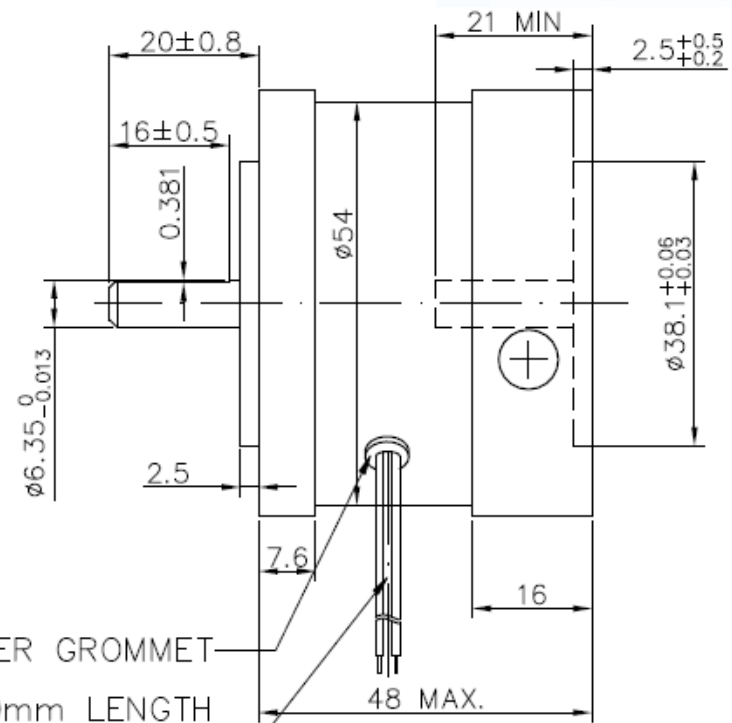
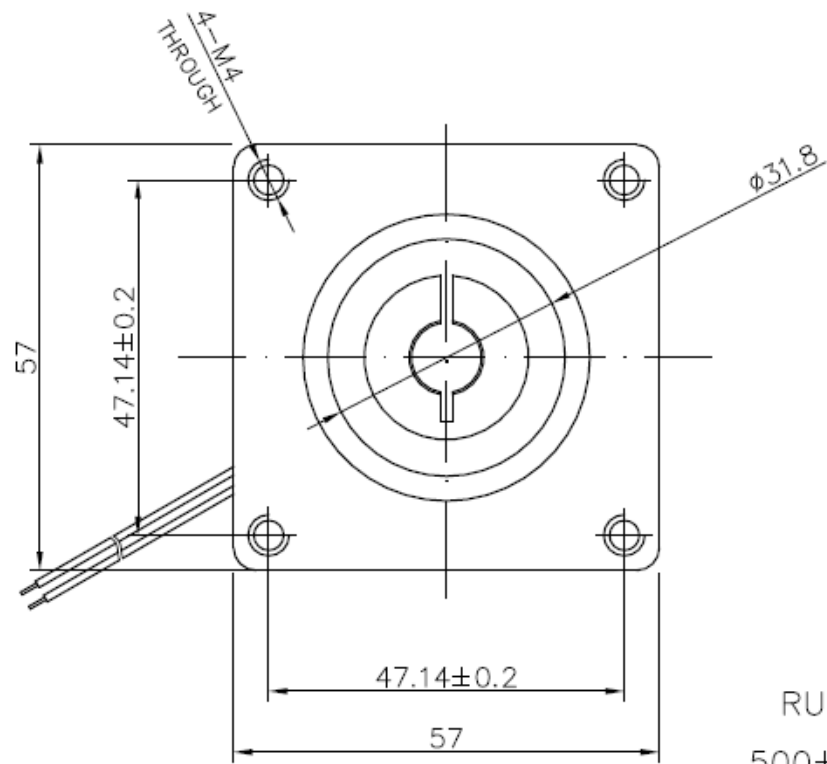
MOTOR INTERFACE:



NOTE: THIS DRAWING HAS BEEN CREATED BY AUTOCAD. MANUAL REVISIONS ARE NOT ALLOWED.

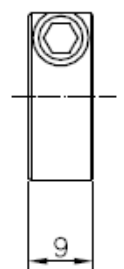
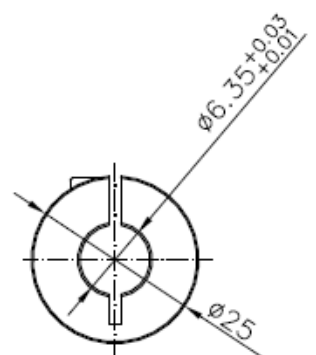
MATERIAL		TOLERANCE UNLESS OTHERWISE SPECIFIED ISO 2768-1 MEDIUM			
DRAWN XXX	CHECKED	APPROVED - DATE	FILENAME	DATE xx/xx/xx	SCALE N/A
CYMATIX			BRAKE		
			BPC017-21-003 REV P2		

REV	DESCRIPTION	DATE	APPROVE
P1	PRELIMINARY	22/06/13	ZZF

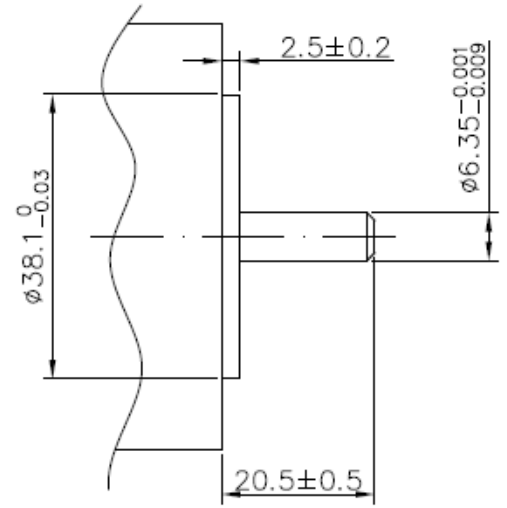


NOTE :

- 1, VOLTAGE : 24VDC
- 2, STATIC TORQUE : 0.5Nm Min.
- 3, RATED CURRENT : 0.27A
- 4, POWER : 6.5W
- 5, RESISTENCE : 93 Ohms
- 6, START VOLTAGE : 18VDCMAX.
7. HI-POT: 500VAC/1S, 2mA
8. POWER OFF BRAKE
9. OFFER AN FIXED SCREW M4 WITH THE BRAKE



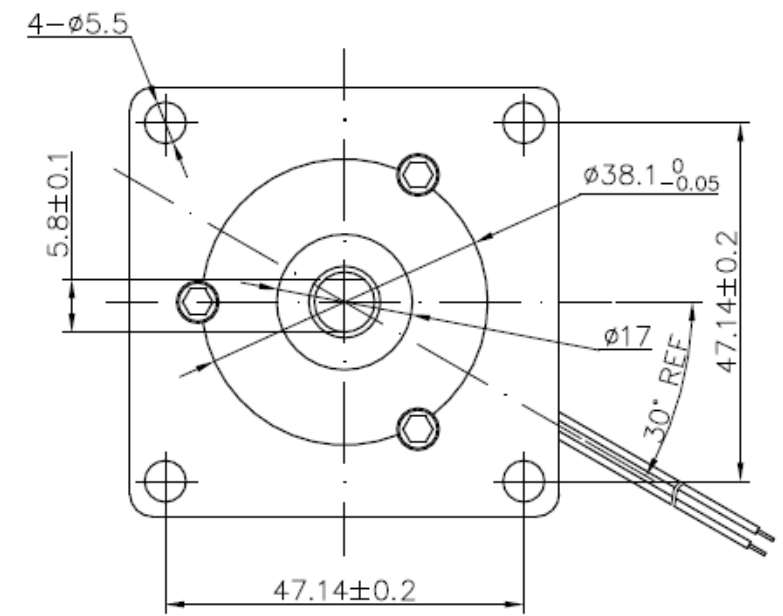
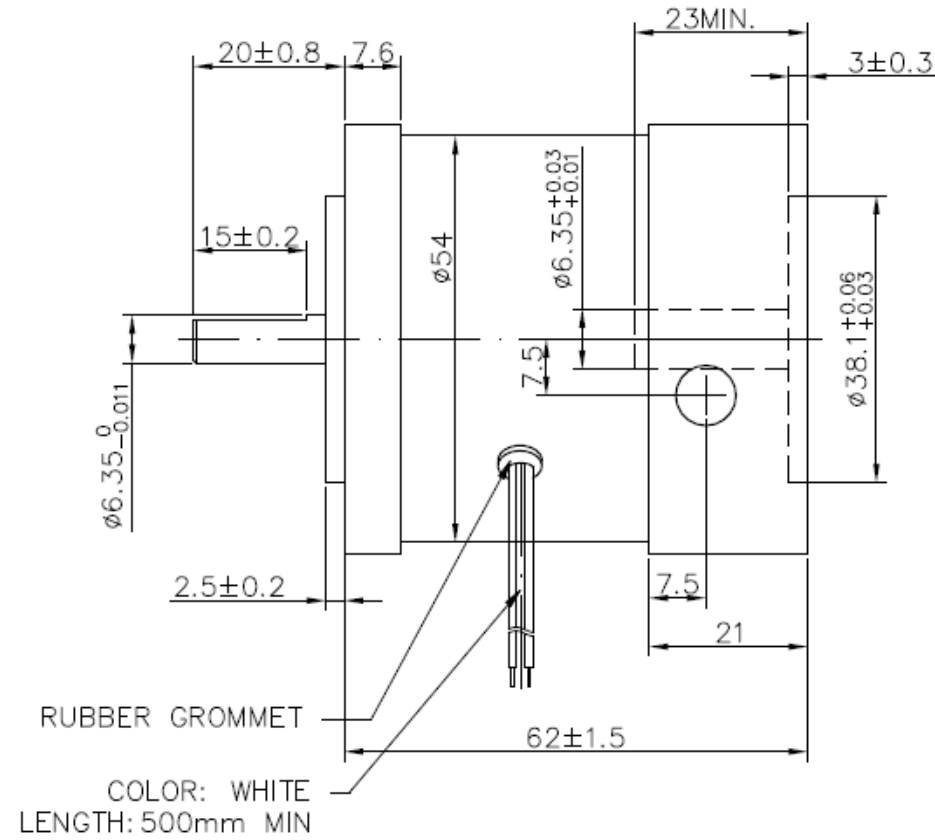
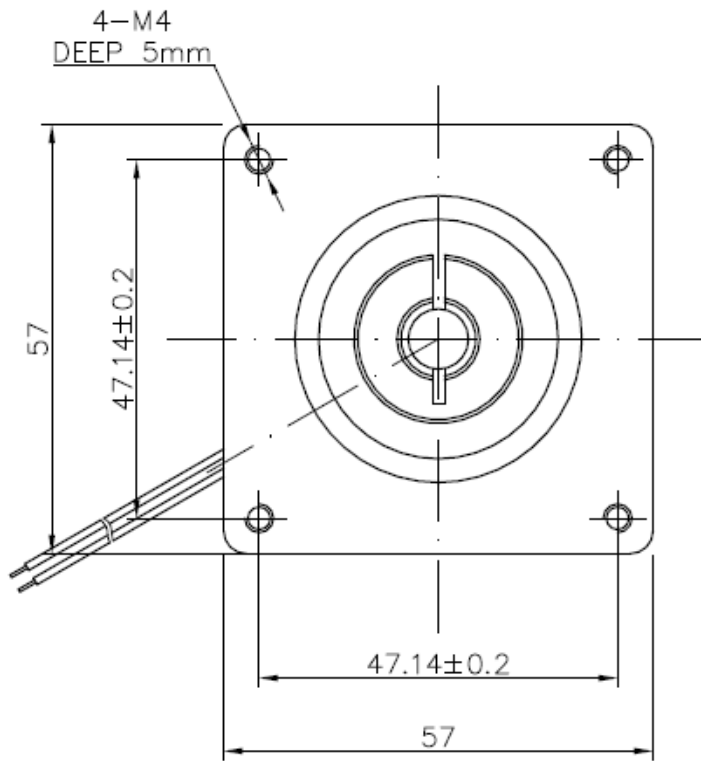
MOTOR INTERFACE:



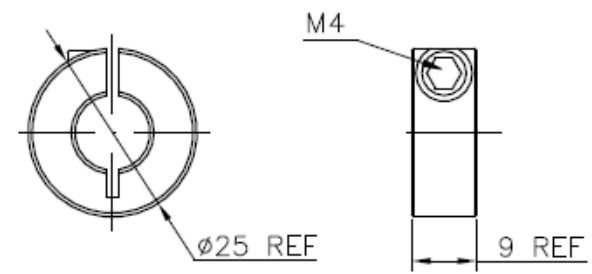
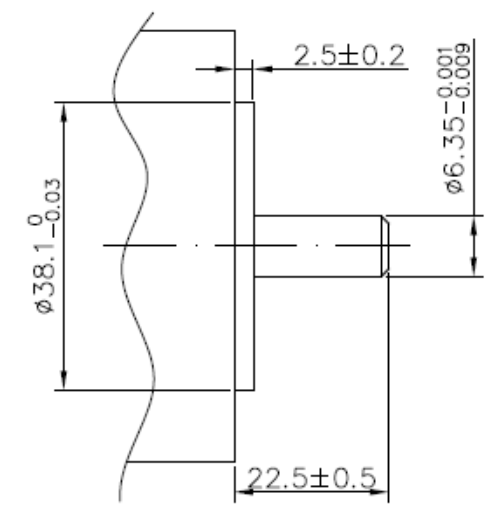
NOTE: THIS DRAWING HAS BEEN CREATED BY AUTOCADMANUAL REVISIONS ARE NOT ALLOWED.

MATERIAL		TOLERANCE UNLESS OTHERWISE SPECIFIED ISO 2768-1 MEDIUM			
DRAWN ZQY	CHECKED	APPROVED - DATE	FILENAME	DATE xx/xx/xx	SCALE N/A
<b>CYMATIX</b>		<b>BRAKE</b>			SHEET 1/1
					BMC023-24-027

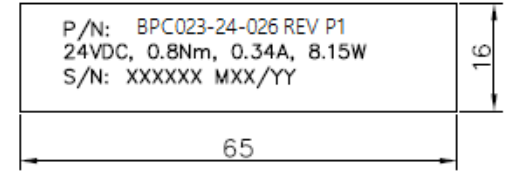
REV	DESCRIPTION	DATE	APPROVE
P1	PRELIMINARY	22/02/09	ZZF



MOTOR INTERFACE:



- NOTE:
- VOLTAGE: 24VDC
  - STATIC TORQUE: 0.8Nm Min.
  - RATED CURRENT: 0.34A
  - POWER: 8.1W
  - RESISTANCE: 74 Ohms
  - START VOLTAGE: 20VDC MAX.
  - HI-POT: 500VAC/1S, 2mA
  - MOMENT OF INERTIA: 27.7 g.cm<sup>2</sup>
  - POWER OFF BRAKE

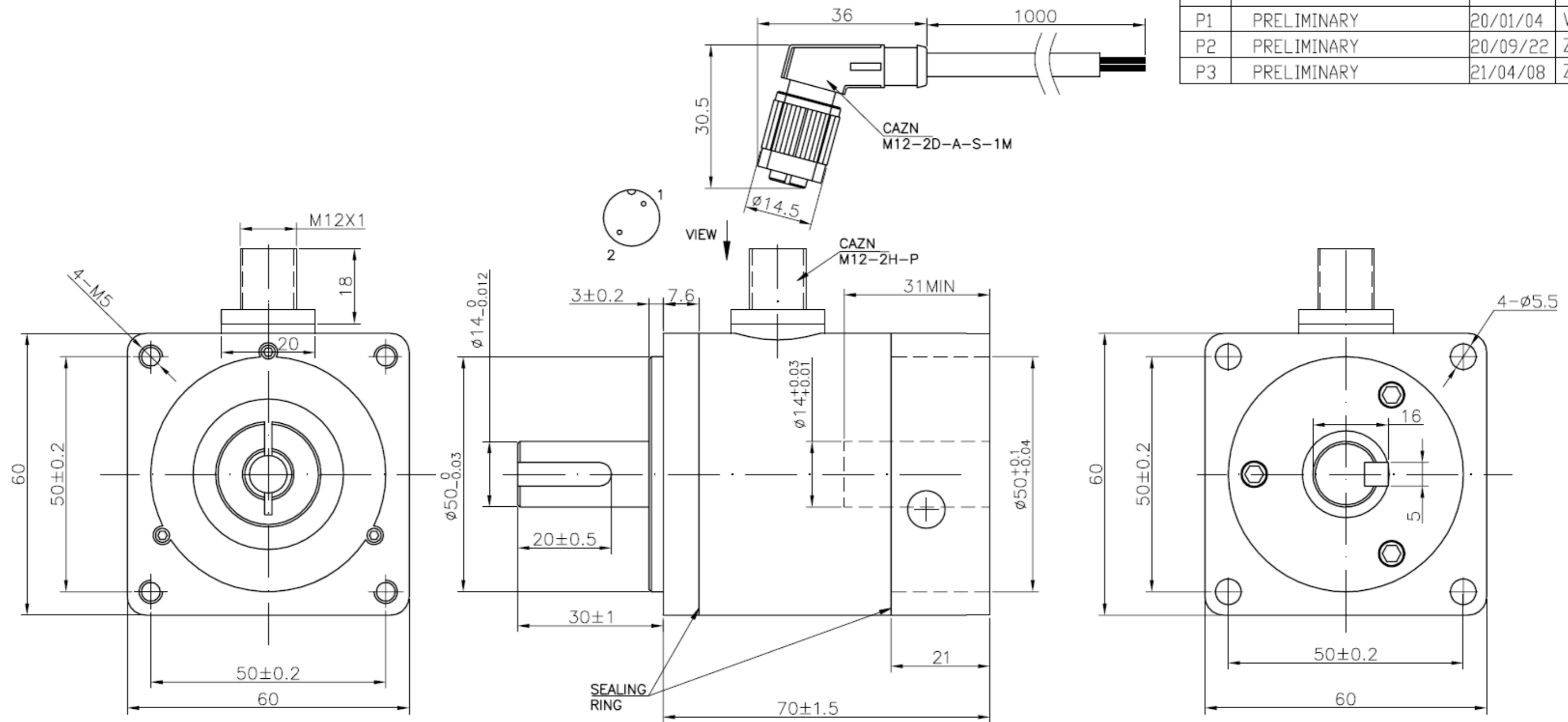


P/N: BPC023-24-026 REV P1  
 24VDC, 0.8Nm, 0.34A, 8.15W  
 S/N: XXXXXX MXX/YY

NOTE: THIS DRAWING HAS BEEN CREATED BY AUTOCADMANUAL REVISIONS ARE NOT ALLOWED.

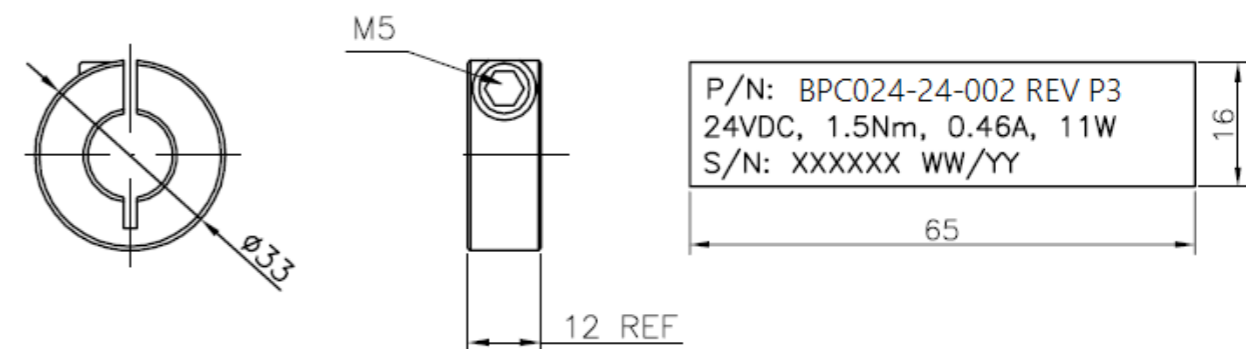
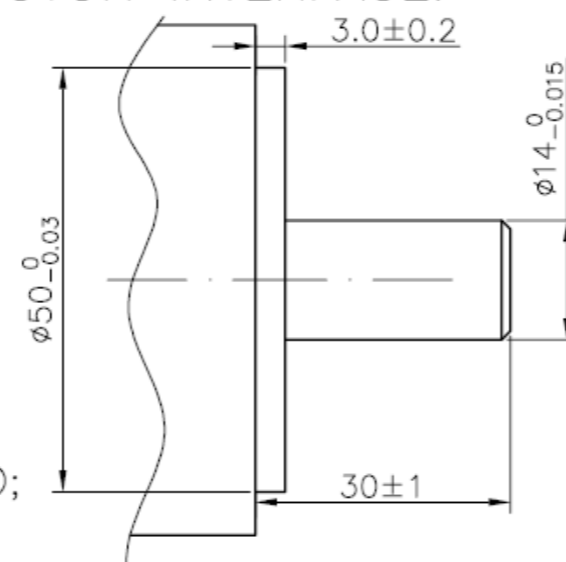
MATERIAL		TOLERANCE UNLESS OTHERWISE SPECIFIED ISO 2768-1 MEDIUM			
DRAWN XXX	CHECKED	APPROVED - DATE	FILENAME	DATE xx/xx/xx	SCALE N/A
<b>CYMATIX</b>		<b>BRAKE</b>			SHEET 1/1
		BPC-023-24-026			

REV	DESCRIPTION	DATE	APPROVE
P1	PRELIMINARY	20/01/04	WDP
P2	PRELIMINARY	20/09/22	ZZF
P3	PRELIMINARY	21/04/08	ZZF



- NOTE:
- VOLTAGE: 24VDC
  - STATIC TORQUE: 1.5Nm Min.
  - RATED CURRENT: 0.46A
  - POWER: 11W
  - RESISTENCE: 52 Ohms
  - START VOLTAGE: 22VDC MAX.
  - HI-POT: 500VAC/1S, 2mA
  - PERMANENT MAGNET BRAKE
- BROWN CONNECT +, THE BRAKE IS RELEASED;  
 BROWN CONNECT -, THE BRAKE IS LOCKED.

MOTOR INTERFACE:

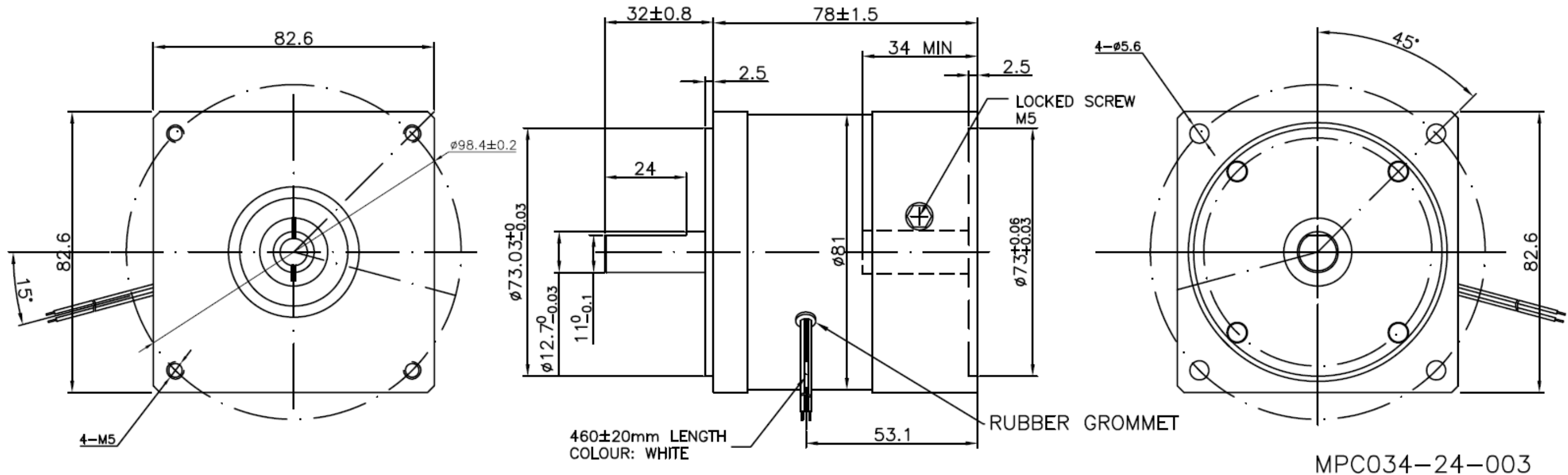


NOTE: THIS DRAWING HAS BEEN CREATED BY AUTOCAD. MANUAL REVISIONS ARE NOT ALLOWED.

MATERIAL		TOLERANCE UNLESS OTHERWISE SPECIFIED ISO 2768-1 MEDIUM			
DRAWN XXX	CHECKED	APPROVED - DATE	FILENAME	DATE xx/xx/xx	SCALE N/A
<b>CYMATIX</b>		<b>BRAKE</b>			SHEET 1/1
					<b>BPC024-24-002</b>

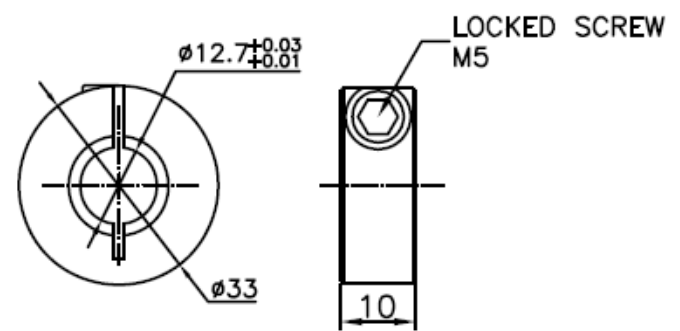
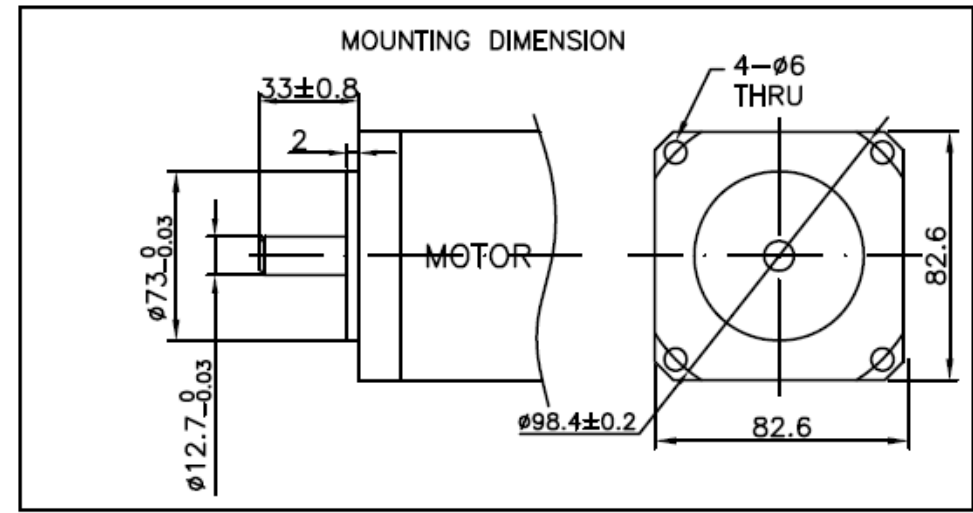


REV	DESCRIPTION	DATE	APPROVE
P1	PRELIMINARY	10/06/12	WL
P2	PRELIMINARY	13/03/20	YJW
P3	PRELIMINARY	13/05/20	YJW
P4	PRELIMINARY	14/05/13	SQ



MPC034-24-003

- NOTE:
- VOLTAGE: 24VDC
  - STATIC TORQUE: 1.68Nm Min.
  - RATED CURRENT: 0.369A
  - POWER: 7.3W
  - RESISTANCE: 65.1 Ohms
  - START VOLTAGE: 15VDCMAX
  - HI-POT: 500VAC/1S, 2mA
  - POWER OFF BRAKE



NOTE: THIS DRAWING HAS BEEN CREATED BY AUTOCAD. MANUAL REVISIONS ARE NOT ALLOWED.

MATERIAL		TOLERANCE UNLESS OTHERWISE SPECIFIED ISO 2768-1 MEDIUM			
DRAWN ZQY	CHECKED	APPROVED - DATE	FILENAME	DATE xx/xx/xx	SCALE N/A
CYMATIX			BRAKE		
			BPC034-24-003		