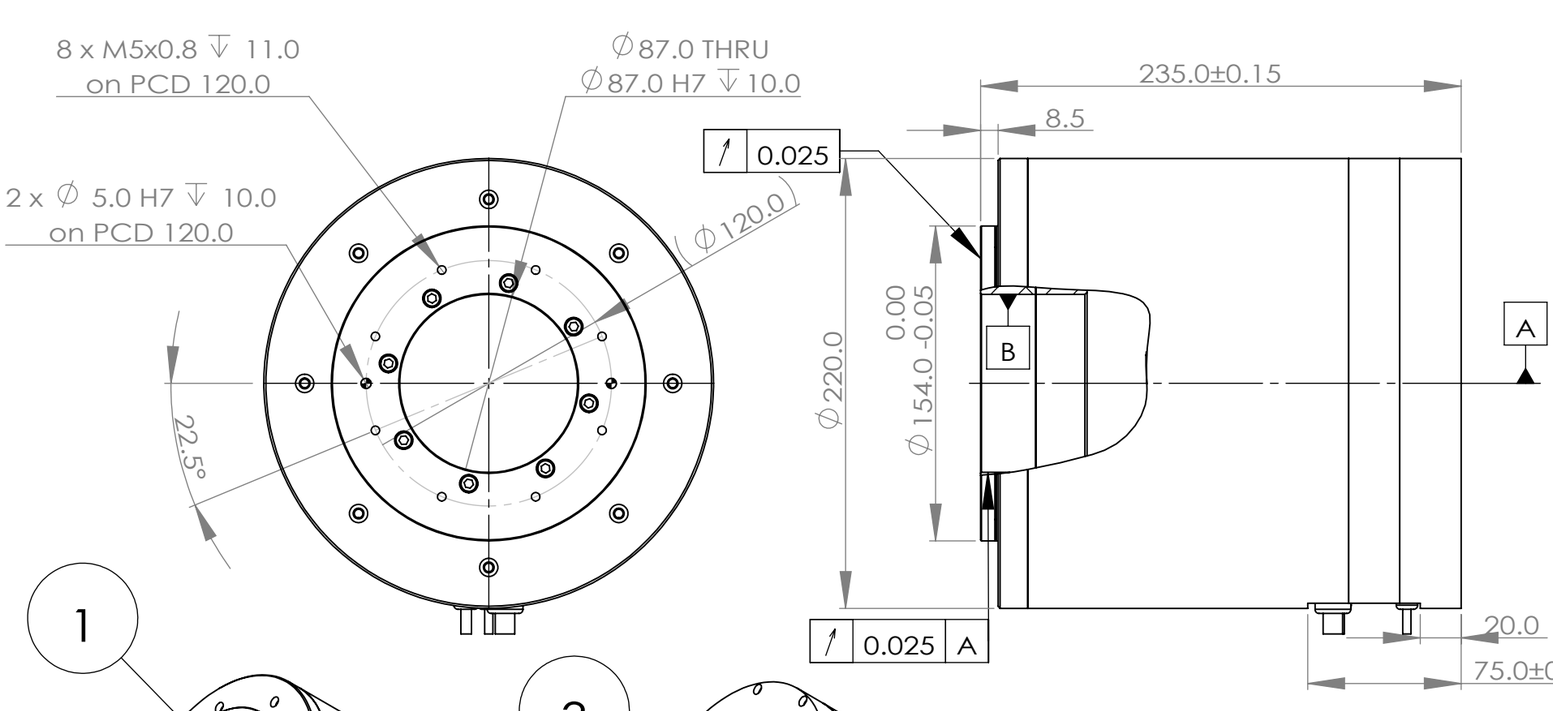
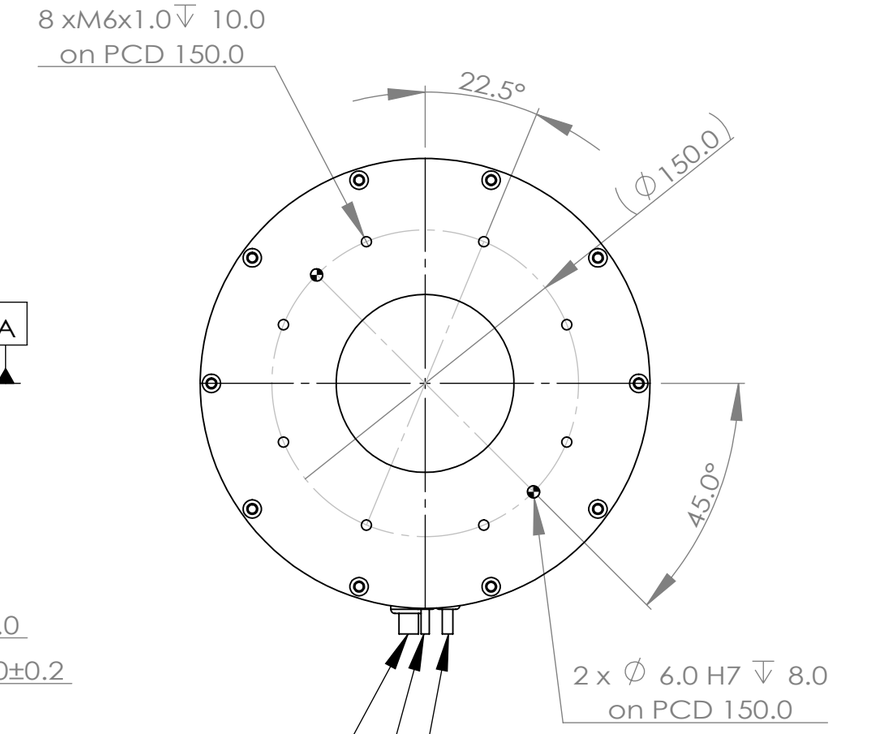
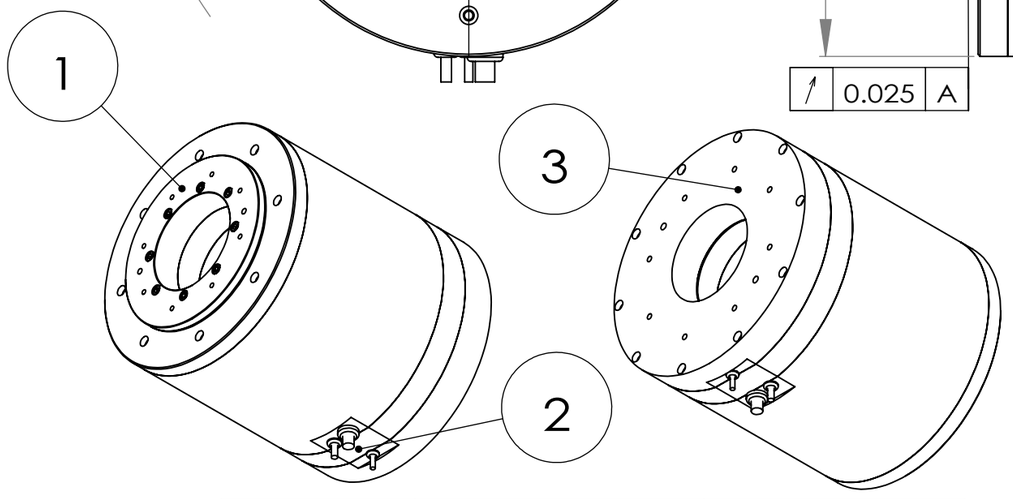
REV	DESCRIPTION	BY	DATE	APPD
00	INITIAL RELEASE	WYW	21-10-2022	YX

ADR220-B235-P/S-J/K-NH-0.5-FB-S305-P25

Customization description:Biss-c Absolute Encoder 23bit







Serial Number	Part Description	Surface Treatment
1	Rotor Plate	Electroless Nickel Plating
2	Cable Output Board	Black Anodised
3	Base Mounting Plate	Black Anodised

Motor cable(4 core)
Diameter: ∅9.5mm
Length:0.5m
Jacket material (colour):PUR(Grey)
Termination:Flying leads
(refer to wiring diagram for detail)

Encoder cable(6 core)
Diameter: ∅4.0 mm
Length:0.5m
Jacket material (colour):PU(Black)
Termination:DSUB 15 PINS(MALE)
(refer to wiring diagram for detail)

Thermal sensor cable(2 core)
Diameter: ∅5.2mm
Length:0.5m
Jacket material (colour):PUR(Grey)
Termination:Flying leads
(refer to wiring diagram for detail)

RELEASED DATE:
2025/2/5

Notes:
1.User to ensure flatness of mounting surface within 0.01/300mm;
2.Cable diameter within +/-0.3mm tolerance, cable length within +/-60.0mm tolerance;
3.Certain specifications in the drawing are subject to change.

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REMOVE ALL SHARP EDGES

GENERAL TOLERANCE
X ± 0.25mm
X.X ± 0.1mm
X.XX ± 0.05mm
X.XXX ± 0.025mm

3rd ANGLE PROJECTION

Designed	WYW	20-10-2022
Drawn	WYW	20-10-2022
Checked	SJ	21-10-2022
Approved	YX	21-10-2022
Material	NA	
Surface Treatment	NA	
Heat Treatment	NA	
Quantity	NA	

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Model:	ADR220-B235
Title :	ADR220-B235
Dwg No:	ADR220-B235
Sheet:	1 OF4
Rev:	0

REV	DESCRIPTION	BY	DATE	APPD
00	INITIAL RELEASE	WYW	21-10-2022	YX

ADR220-B235-P-K-H9D-0.5-FB-S305-P25

Customization description:Biss-c Absolute Encoder 23bit

ADR220-B235-P			
Rev0	SJ	2022/6/24	
Approved	Manager	2022/6/25	
Performance Parameters	**Symbol**	**Unit**	**Value**
Continuous Torque (NC)@100ºC[1]	T_{cn}	Nm	78.2
Peak Torque	T_{pk}	Nm	211.2
Torque Constant ±10%	K_t	Nm/Arms	7.90
Back EMF Constant ±10%	K_e	Vpeak/rpm	0.68
Motor Constant @25ºC	K_m	Nm/Sqrt(W)	5.89
Resistance (L-L) @25ºC ±10%[2]	R_{25}	O	1.2
Inductance (L-L) ±20%[3]	L	mH	11.9
Electrical Time Constant	t_e	ms	9.92
Continuous Current (NC)@100ºC[1]	I_{cn}	Arms	9.9
Peak Current	I_{pk}	Arms	29.7
Continuous Power Dissipation (NC)@100ºC[1]	P_{cn}	W	227.4
Max. Coil Temperature	t_{max}	ºC	100
Thermal Dissipation Constant (NC)[1]	K_{thn}	W/ºC	3.0
Max. Bus Voltage	U_{bus}	Vdc	600
Pole Number	2p	-	24
Rec. Max Speed @Peak Torque (415V AC)[4]	O_{max}	rpm	300
Rec. Max Speed @Continuous Torque (415V AC)[4]	O_{max}	rpm	300
Mechanical Parameters			
Overall Mass (NC)	m_n	kg	TBD
Rotor Inertia	J_r	$kg \cdot m^2$	TBD
Axial Runout	-	µm	25
Radial Runout	-	µm	25
Max. Axial Load (Upright Mounting)[5]	-	N	1669
Max Axial Load (Inverted / Wall mounting)	-	N	105
Max Moment Load (Upright Mounting)	-	Nm	85
Max Moment Load (Inverted / Wall Mounting)	-	Nm	9.4
Encoder Parameters			
Absolute Encoder	-	bit	23
Accuracy after Error Mapping[6]	-	arc sec	±3
Accuracy without error mapping[6]		arc sec	±15
Repeatability[6]	-	arc sec	±1.5

[1] Measurement is taken at ambient temperature 25ºC. Value depends on the thermal environment.
Abbreviations: NC-Natural Cooling

[2] Resistance is measured by DC current with standard 0.5 m cable.

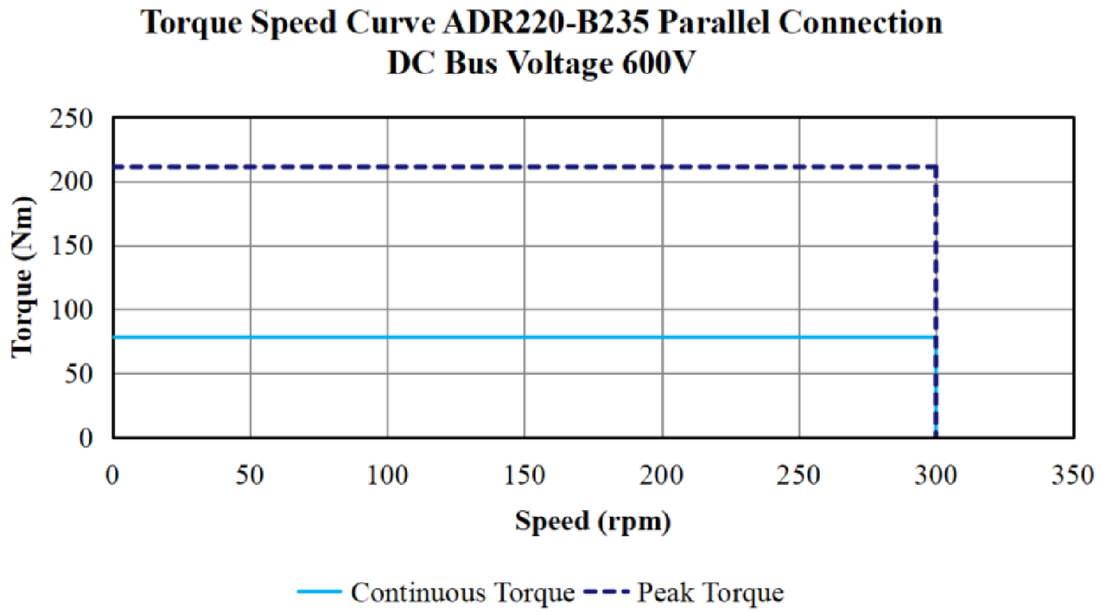
[3] Inductance is measured by current frequency of 1 kHz.

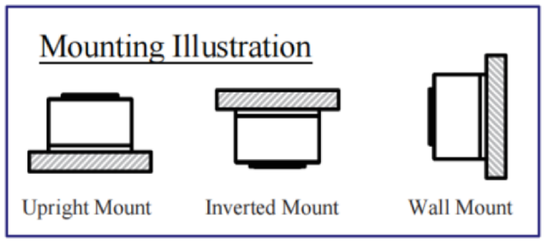
[4] The value is based on absolute encoder under max. bus voltage.

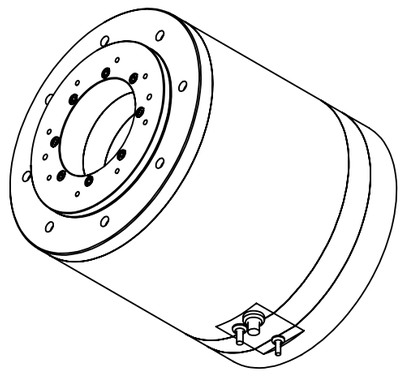
[5] Please refer to the illustration for different mountings.

[6] Based on absolute encoder with standard runout.

The contents of datasheet are subject to change without prior notice.







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GENERAL TOLERANCE
X ± 0.25mm
X.X ± 0.1mm
X.XX ± 0.05mm
X.XXX ± 0.025mm

3rd ANGLE PROJECTION

Designed	WYW	20-10-2022
Drawn	WYW	20-10-2022
Checked	SJ	21-10-2022
Approved	YX	21-10-2022
Material	NA	
Surface Treatment	NA	
Heat Treatment	NA	
Quantity	NA	

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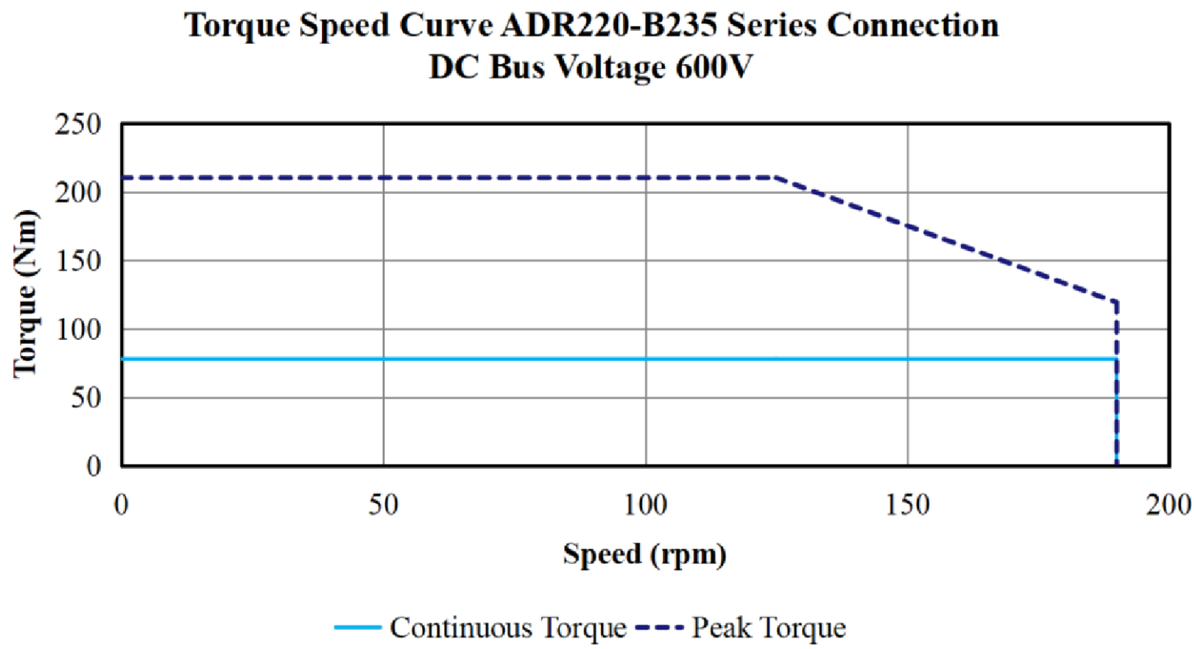
Model:	ADR220-B235
Title :	ADR220-B235
Dwg No:	ADR220-B235
Sheet:	2 OF4
Rev:	0

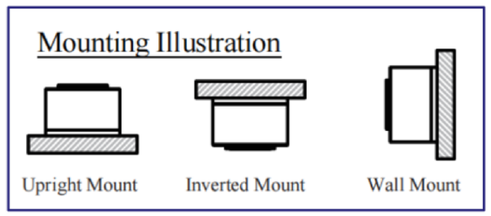
REV	DESCRIPTION	BY	DATE	APPD
00	INITIAL RELEASE	WYW	21-10-2022	YX

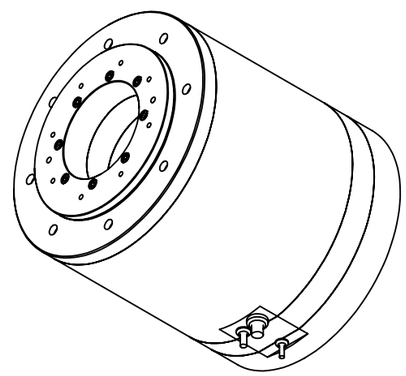
ADR220-B235-S-K-H9D-0.5-FB-S305-P25

Customization description:Biss-c Absolute Encoder 23bit

ADR220-B235-S			
Rev0	SJ	2022/6/24	
Approved	Manager	2022/6/25	
Performance Parameters	**Symbol**	**Unit**	**Value**
Continuous Torque (NC)@100°C[1]	T_{cn}	Nm	77.9
Peak Torque	T_{pk}	Nm	210.3
Torque Constant ±10%	K_t	Nm/Arms	23.60
Back EMF Constant ±10%	K_e	Vpeak/rpm	2.02
Motor Constant @25°C	K_m	Nm/Sqrt(W)	6.0
Resistance (L-L) @25°C ±10%[2]	R_{25}	O	10.32
Inductance (L-L) ±20%[3]	L	mH	106.7
Electrical Time Constant	t_e	ms	10.34
Continuous Current (NC)@100°C[1]	I_{cn}	Arms	3.3
Peak Current	I_{pk}	Arms	9.9
Continuous Power Dissipation (NC)@100°C[1]	P_{cn}	W	217.3
Max. Coil Temperature	t_{max}	°C	100
Thermal Dissipation Constant (NC)[1]	K_{thn}	W/°C	2.9
Max. Bus Voltage	U_{bus}	Vdc	600
Pole Number	2p	-	24
Rec. Max Speed @Peak Torque (415V AC)[4]	O_{max}	rpm	125
Rec. Max Speed @Continuous Torque (415V AC)[4]	O_{max}	rpm	190
Mechanical Parameters			
Overall Mass (NC)	m_n	kg	TBD
Rotor Inertia	J_r	$kg \cdot m^2$	TBD
Axial Runout	-	μm	25
Radial Runout	-	μm	25
Max. Axial Load (Upright Mounting)[5]	-	N	1669
Max Axial Load (Inverted / Wall mounting)	-	N	105
Max Moment Load (Upright Mounting)	-	Nm	85
Max Moment Load (Inverted / Wall Mounting)	-	Nm	9.4
Encoder Parameters			
Absolute Encoder	-	bit	23
Accuracy after Error Mapping[6]	-	arc sec	±3
Accuracy without error mapping[6]		arc sec	±15
Repeatability[6]	-	arc sec	±1.5







[1] Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
Abbreviations: NC-Natural Cooling
[2] Resistance is measured by DC current with standard 0.5 m cable.
[3] Inductance is measured by current frequency of 1 kHz.
[4] The value is based on absolute encoder under max. bus voltage.
[5] Please refer to the illustration for different mountings.
[6] Based on absolute encoder with standard runout.
The contents of datasheet are subject to change without prior notice.

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GENERAL TOLERANCE
X ± 0.25mm
X.X ± 0.1mm
X.XX ± 0.05mm
X.XXX ± 0.025mm

3rd ANGLE PROJECTION

Designed	WYW	20-10-2022
Drawn	WYW	20-10-2022
Checked	SJ	21-10-2022
Approved	YX	21-10-2022
Material	NA	
Surface Treatment	NA	
Heat Treatment	NA	
Quantity	NA	

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Model:	ADR220-B235
Title :	ADR220-B235
Dwg No:	ADR220-B235
Sheet:	3 OF4
Rev:	0

REV	DESCRIPTION	BY	DATE	APPD
00	INITIAL RELEASE	WYW	21-10-2022	YX

ADR220-B235-P/S-J/K-NH-0.5-FB-S305-P25

Customization description:Biss-c Absolute Encoder 23bit

WIRING DIAGRAM AND CABLE INFORMATION:

Table 1:
Motor Power Cable Information

Specification	Unit		Remarks
Cable Diameter	mm	9.5	See Note 1
Cable Length	m	0.5	See Note 1
Number of Cores	-	4×2.5mm^2	
Cable Colour	-	Grey	
Minimum Bending Radius	mm	Moving:Cable∅ x 12	
		Fixed: Cable ∅x6	
Rated Voltage	-	3-phase 415Vac	
Termination Type	-	Flying Leads	
Ferrite Bead	-	Yes	
CE Compliance	-	Yes	

Table 2:
Hall Sensor Cable Information

Specification	Unit		Remarks
Cable Diameter	mm	5.2	See Note 1
Cable Length	m	0.5	See Note 1
Number of Cores	-	2×0.14mm^2	
Cable Colour	-	Grey	
Minimum Bending Radius	mm	Moving:Cable∅ x 12	
		Fixed: Cable ∅x6	
Temperature Option	-	Provided	J-Type(thermostat) K-Type(PT100)
CE Compliance	-	Yes	

Table 3:
Encoder Cable Information

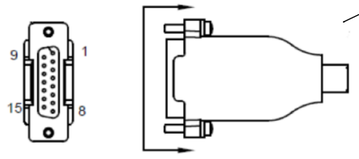
Specification	Unit		Remarks
Cable Diameter	mm	4.0	See Note 1
Cable Length	m	0.5	See Note 1
Number of Cores	-	6	
Cable Colour	-	Black	
Minimum Bending Radius	mm	Moving:Cable∅ x 12	
		Fixed: Cable ∅x6	

Notes:
1. Cable diameter within +/-0.3mm tolerance, cable length within +/-60.0mm tolerance;
2. Certain specifications in the drawing are subject to change.

Encoder Cable

PIN	DESCRIPTION	COLOUR
2	GND	WHITE
4	5V	RED
5	DATA+	YELLOW
8	CLK+	BROWN
10	GND(Short with Pin2)	-
12	5V(Short with Pin4)	-
13	DATA-	GREY
15	CLK-	BLACK
Case	Shield	-

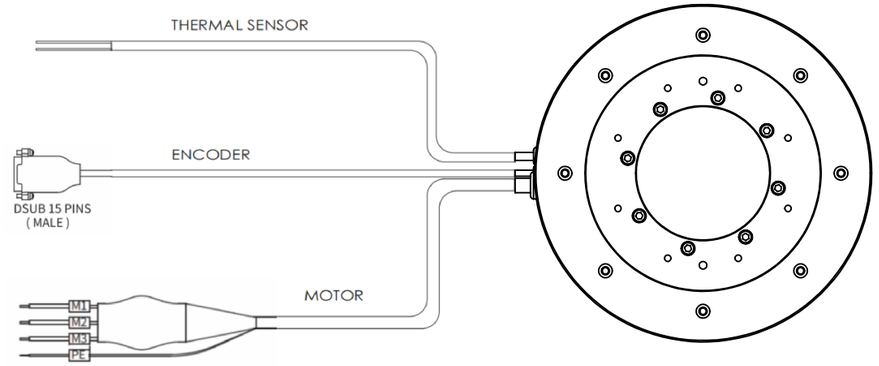
DSUB 15 PINS (MALE)



Thermal Sensor Cable

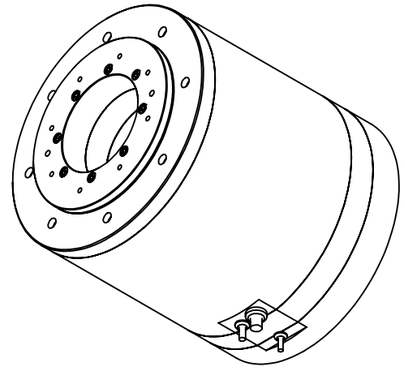
PIN	DESCRIPTION	COLOUR
-	T1	PINK
-	T2	BLUE

THERMAL SENSOR WIRE
(K TYPE - PT100)
(J TYPE - THERMOSTAT)



Motor Cable

PIN	DESCRIPTION	COLOUR
-	M1	BLACK 1
-	M2	BLACK 2
-	M3	BLACK 3
-	PE	YELLOW / GREEN



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GENERAL TOLERANCE
X ± 0.25mm
X.X ± 0.1mm
X.XX ± 0.05mm
X.XXX ± 0.025mm

3rd ANGLE PROJECTION

Designed	WYW	20-10-2022
Drawn	WYW	20-10-2022
Checked	SJ	21-10-2022
Approved	YX	21-10-2022
Material	NA	
Surface Treatment	NA	
Heat Treatment	NA	
Quantity	NA	

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Model:	ADR220-B235
Title :	ADR220-B235
Dwg No:	ADR220-B235
Sheet:	4 OF4
Rev:	0