



AG3 SERIES ANGLE SENSOR COMMON SPEC. SPECSSSPECIFICATION


FILE NO	AG3 V2.0
DATE	2020/8/12

ITEM NO	MODEL	CUSTOMER P/N
1	AG3 SERIES	

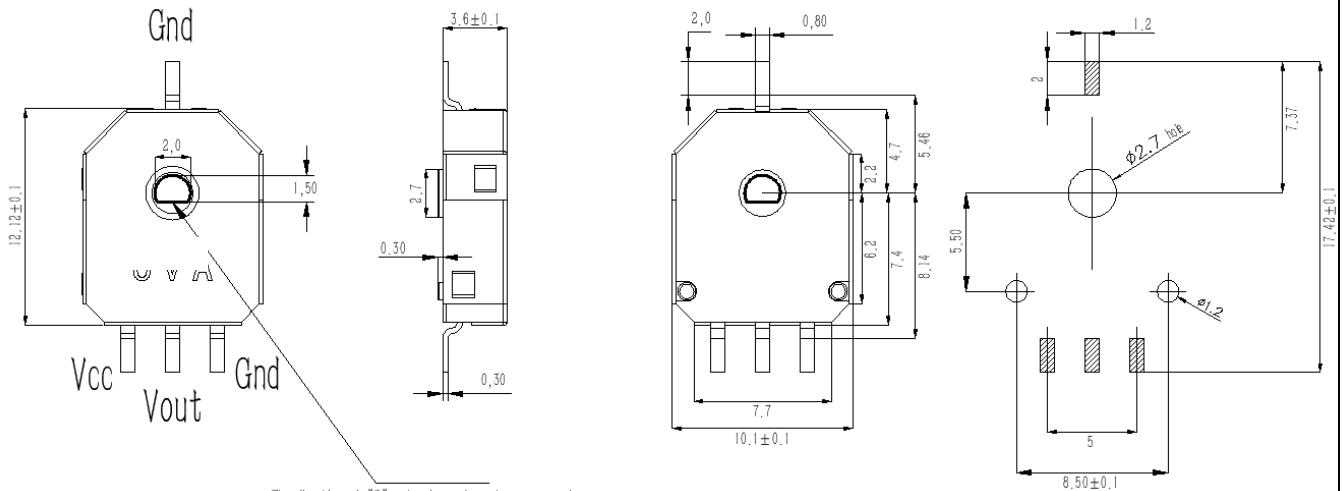
MANAGER	MARKETING	ENG	QA	CUSTOMER APPROVAL		

Revision Record

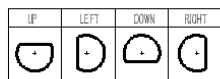
Date	Revised Paragraph	Description	Remark
2018.6.19	All	MS236, New Release	Engineering Draft
2018.7.12	New Model	A3	Engineering Draft
2018.7.12	Add Part number	AN3: 10 bit version	Sample date:2019Q1
2018.9.29	Drawing Modify	See drawing	“
2019.1.18	8.8, 8.15, 8.16, 8.19	Add-up AG3 Spec	Sample date:2019Q1
2019.1.19	Drawing Modify	See drawing	“
2019.3.26	Drawing Modify	See drawing	Sample date:2019Q2
2019.5.20	Drawing Modify & add up 8.20 for center position	Add-up Ax3 Spec.	Sample date:2019.5.16
2019.6.6	1) Modify 8.4.1 2) 8.5 3) 8.21	1) Add-up: $@\theta=50\%$; 2) $\leq 0.05W$ 3) User’s filter circuit	

MODEL	PRODUCT	
AG3 SERIES	Contactless Angle Sensor	


1. OUTLINE DIMENSIONS



The direction of "D" rotor is random when programming, customer may use 1/2*Vdd as their center point, or may designate desired direction per below list.



PIN ID	PCB MARKING	DESCRIPTION
LEFT	+	Power Supply
MIDDLE	Vout	Voltage output
RIGHT	-	Ground
TOP	-	Ground

	DRAWING NO	DATE
	0- AG3-2.0	2020.8.12

WIRING DESCRIPTION			
Refer to Clause (1) Outlined Dimension Drawing for Wiring Description.			
2.	APPLICATION SCOPE	This product is suitable for the measuring of rotational angle for servo and actuators on robots, UAV, Controllers.	
3.	MODEL	AG3	
4.	APPEARANCE	There shall be no remarkable damage in the visual inspection. Products shall be judged by boundary samples if there are any doubts.	
5.	INSTALLATION DIMENSIONS	REFER TO CLAUSE 1 OUTLINE DIMENSIONS	
7.	MAX RATINGS		
NO.	ITEM	TESTING METHOD AND CONDITION	SPECIFICATION
7.1	Operating Temp		-40° ~ +85°C
7.2	Storage Temp		-10° ~ +60°C
7.3	Operating Voltage		2.6~3.3VDC
7.4	Operating Current	@Vdd=3.3V	Max: ≦20mA
8.	SPECIFICATION		
8.1	Rotation type	Shaft Rotating	Optional Hollow Shaft D Rotor
8.2	Shaft Rotating Angle		360° Mechanical
8.3	Electrical Continuity Angle		360°
8.4	Effective Electrical Angle		360° Linear
8.4.1	Output Electric Angle Error	24-bit acquisition sys.	±1.5° @θ=50%
8.5	Power		≤0.06W
8.6	Rotational Torque	Insert Output Shaft	20 ± 10 gf.cm;
8.7	Output Voltage Offset	Precision Multi-meter	0V~Vdd
8.8	Independent Linearity		≤±2% @θ=50%
8.9	Shaft Rotation Wobble	Engineering Projector	Max:±2°

8.10	Noise (mV)	Multimeter · Oscilloscope	$\cong 12\text{mV}$
8.11	Refresh Frequency	Oscilloscope	$\cong 8.3\text{KHz}$
8.12	Max Revolution	Frequency Meter	$\cong 3600\text{ RPM}$
8.13	Power On Output Response	Precision Multi-meter	$\leq 1\text{ ms}$
8.14	Output Voltage Range	@Vdd=2.5/3.3	0~Vdd@360°
8.15	Center Output Variation	Output & Tracking Testing System	$\pm 10\text{mV}@ (1/2)\text{Vdd}$
8.16	Output Voltage Offset	Output & Tracking Testing System.	$\cong 12\text{mV}$
8.17	Output Tracking (360° continuous)	Output & Tracking Tester	<p>Linear, Analog</p>
8.18	Output Resolution(@360°)	Precision Multimeter @Vdd=3.3V	12-bit
8.19	Output Signal & I/F	Standard : Analog, Linear Selecting : I2C	Analog; I2C
8.20	Center Position	Output voltage $\sim 1/2\text{ Vdd}$	D rotor flat edge downward to 3x terminals side.
8.21	Recommended user's Filter Circuit		
9. RELIABILITY			
9.1	Cycle Life	Cycle Life Tester	1-Million cycles min.
9.2	witch Cycle Life	N/A	N/A

9.3	High Temp	96 hours@85±2°C	Output variation <2%;
9.4	Low Temp	96 hours@-40±2°C	Output variation <3%;
9.5	Humid	96 hours@60±2°C, 90~95% RH	Output variation <2%;
9.6	Dipping Test	10s@260°C	Output Variation <1%
9.7	Soldering Condition		
9.7.1	Reflow soldering	Not Recommended	
9.7.2	Wave soldering	Yes. Manual soldering recommended.	
10.	ENVIRONMENTAL	ROHS	Compliant to
10.1	ESD; HUMAN	MIL-STD-883G Method 3015.7	(±)1000V ~ 4000V, Step : (±)500V
10.2	ESD; MACHINE	JEDEC EIA/JESD22-A115	(±)100V ~ 300V, Step : (±)50V