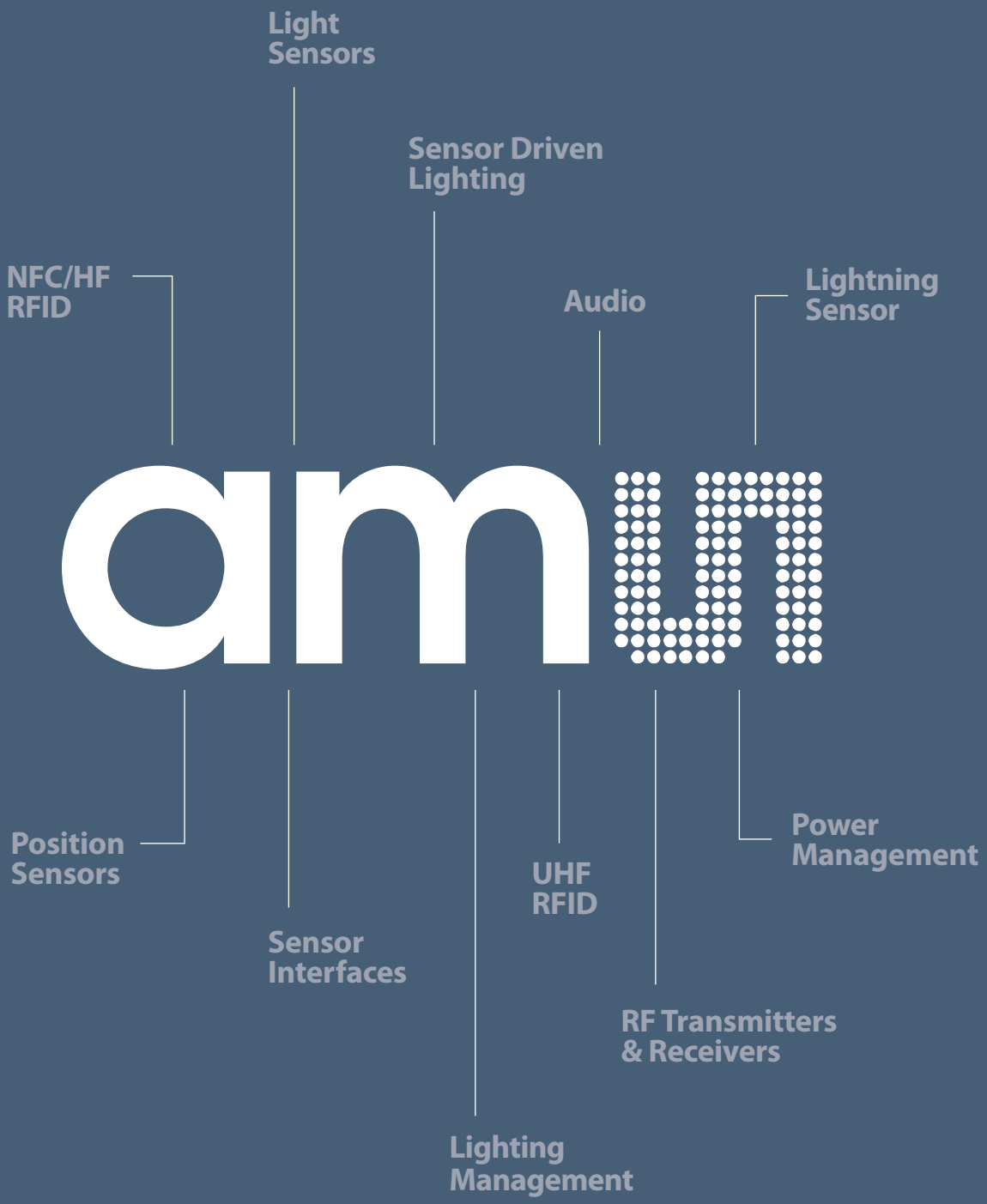
Magnetic Position Sensors

ams


Light Sensors
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NFC/HF RFID
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Position Sensors
Sensor Interfaces
UHF RFID
Power Management
RF Transmitters & Receivers
Lighting Management

Shaping the World with Sensor Solutions

ams' contactless position sensors offer best-in-class stray field immunity, high performance, superior durability and adhere to the most stringent safety requirements. Our position sensors are designed with **ams' patented differential principle** which eliminates the effects of environmental factors such as stray magnetic fields, vibration and misalignment.

The portfolio includes a broad range of high performance rotary and linear magnetic position ICs suited for automotive, industrial and consumer applications.

Magnetic Rotary Position Sensors

The Magnetic Rotary Position Sensor product family detects the absolute angular orientation of an on-axis 2-pole magnet rotating over the center of the IC. The absolute angular position can be displayed on different outputs as PWM, ABI, UVW or directly read through the interface. From 8-bit up to 14-bit resolutions are available to suit different application requirements.
This technology is suited for high accuracy angle position detection, high speed rotation systems and motor control (BLDC motors). All Rotary Magnetic Position Sensors are an ideal replacement for absolute/ incremental optical sensors, other magnetic and inductive technologies, potentiometers as well as magnetic switches.

Magnetic Linear Incremental Position Sensors

The Linear Incremental Magnetic Position Sensor product family detects linear movement of multi-pole magnetic strips. Circular multi-pole magnetic rings can also be used in rotary incremental rotation off-axis application.
This high precision product family allows to detect linear movement with a resolution as precise as 0.5µm. Linear Incremental Magnetic Position Sensors are ideal in a variety of motion sensing applications found in many medical, industrial and consumer products.

3D Absolute Position Sensors

The new 3D Absolute Position Sensor product family is capable to detect absolute linear position of a 2-pole magnet, absolute angular orientation in on- and off-axis systems as well as real 3D position measurement. High level of flexibility and precision is achieved through the linearization in the specific application. The superior stroke and input magnetic field make these ICs suitable for countless applications in the industrial and automotive markets.

For more information on our
Magnetic Position Sensors, please go to:
www.ams.com/Magnetic-Position-Sensors

Magnetic Position Sensors

Magnetic Rotary Position Sensors

	Part No.	Description	Resolution	Interfaces	Output	Max Speed	Overvoltage Protection	Redundant	Supply Voltage	Temperature Range	Package	AUT Qualified
						rpm			V	°C		
	AS5030	8-bit Rotary Position Sensor with Digital Angle (Interface) and PWM output	8-bit	SSI	Digital Angle (Interface) / PWM	30000	-	-	5.0	-40 to +125	TSSOP-16	-
	AS5035	8-bit Rotary Position Sensor with ABI output	8-bit	-	ABI	15000	-	-	3.3 or 5.0	-40 to +125	SSOP-16	-
	AS5040	10-bit Rotary Position Sensor with Digital Angle (Interface), ABI, UVW and PWM output	10-bit	SSI	Digital Angle (Interface) / ABI / UVW / PWM	15000	-	-	3.3 or 5.0	-40 to +125	SSOP-16	-
	AS5043	10-bit Rotary Position Sensor with Digital Angle (Interface) and Linear analog output	10-bit	SSI	Digital Angle (Interface) / Linear analog	15000	-	-	3.3 or 5.0	-40 to +125	SSOP-16	-
	AS5045	12-bit Rotary Position Sensor with Digital Angle (Interface) and PWM output	12-bit	SSI	Digital Angle (Interface) / PWM	15000	-	-	3.3 or 5.0	-40 to +125	SSOP-16	-
NEW ►	AS5045B	12-bit Rotary Position Sensor with Digital Angle (Interface) and PWM and ABI output	12-bit	SSI	Digital Angle (Interface) / ABI / PWM	15000	-	-	3.3 or 5.0	-40 to +125	SSOP-16	-
NEW ►	AS5047D	14-bit Rotary Position Sensor with Digital Angle (Interface) and ABI and UVW output (also PWM possible)	14-bit	SPI	Digital Angle (Interface) / ABI / UVW / PWM	15000	-	-	3.3 or 5.0	-40 to +125	TSSOP-14	-
	AS5048A	14-bit Rotary Position Sensor with Digital (Interface) and PWM output	14-bit	SPI	Digital Angle (Interface) / PWM	-	-	-	3.3 or 5.0	-40 to +150	TSSOP-14	-
	AS5048B	14-bit Rotary Position Sensor with Digital (Interface) and PWM output	14-bit	I²C	Digital Angle (Interface) / PWM	-	-	-	3.3 or 5.0	-40 to +150	TSSOP-14	-
	AS5050A	10-bit Rotary Position Sensor with Digital Angle (Interface) output	10-bit	SPI	Digital Angle (Interface)	-	-	-	3.3	-40 to +85	QFN-16	-
	AS5055A	12-bit Rotary Position Sensor with Digital Angle (Interface) output	12-bit	SPI	Digital Angle (Interface)	-	-	-	3.3	-40 to +85	QFN-16	-
	AS5115	Rotary Position Sensor with Sin/Cos signal output	-	SSI	sin/cos	30000	-	-	5.0	-40 to +150	SSOP-16	•
	AS5130	8-bit Rotary Position Sensor with Digital Angle (Interface) and PWM output	8-bit	SSI	Digital Angle (Interface) / PWM	30000	-	-	5.0	-40 to +125	SSOP-16	•
	AS5132	8.5-bit Rotary Position Sensor with Digital Angle (Interface), ABI, UVW (up to 6 Pole Pairs) and PWM output	8.5-bit	SSI	Digital Angle (Interface) / ABI / UVW (up to 6 Pole Pairs) / PWM	72900	-	-	5.0	-40 to +150	SSOP-20	•
	AS5134	8.5-bit Rotary Position Sensor with Digital Angle (Interface), ABI, UVW (up to 6 Pole pairs) and PWM output	8.5-bit	SSI	Digital Angle (Interface) / ABI / UVW (up to 6 Pole Pairs) / PWM	82000	-	-	5.0	-40 to +140	SSOP-20	•
	AS5140H	10-bit Rotary Position Sensor with Digital Angle (Interface) Output, ABI and PWM output	10-bit	SSI	Digital Angle (Interface) / ABI / PWM	15000	-	-	3.3 or 5.0	-40 to +150	SSOP-16	•
	AS5145A/B	12-bit Rotary Position Sensor with Digital Angle (Interface), PWM and ABI output	12-bit	SSI	Digital Angle (Interface) / ABI / PWM	15000	-	-	3.3 or 5.0	-40 to +150	SSOP-16	•
	AS5145H	12-bit Rotary Position Sensor with Digital Angle (Interface) and PWM output	12-bit	SSI	Digital Angle (Interface) / PWM	15000	-	-	3.3 or 5.0	-40 to +150	SSOP-16	•
NEW ►	AS5147	14-bit Rotary Position Sensor with Digital Angle (Interface) and ABI and UVW output (also PWM possible)	14-bit	SPI	Digital Angle (Interface) / ABI / UVW / PWM	15000	-	-	3.3 or 5.0	-40 to +150	TSSOP-14	•

Magnetic Rotary Position Sensors

Part No.	Description	Resolution	Interfaces	Output	Max Speed	Overvoltage Protection	Redundant	Supply Voltage	Temperature Range	Package	AUT Qualified
					rpm			V	°C		
AS5161	12-bit Rotary Position Sensor with PWM output and overvoltage protection	12-bit	-	PWM	-	•	-	5.0	-40 to +150	SOIC-8	•
AS5162	12-bit Rotary Position Sensor with Linear analog output and overvoltage protection	12-bit	-	Linear analog	-	•	-	5.0	-40 to +150	SOIC-8	•
AS5163	12-bit Rotary Position Sensor with Linear analog or PWM output and overvoltage protection	12-bit	-	Linear analog / PWM	-	•	-	5.0	-40 to +150	TSSOP-14	•
AS5215	Redundant Rotary Position Sensor with Sin/Cos output	-	SSI	sin/cos	30000	-	•	5.0	-40 to +150	MLF-32	•
AS5245	Redundant 12-bit Rotary Position Sensor with Digital Angle (Interface) and ABI output	12-bit	SSI	Digital Angle (Interface) / ABI / PWM	15000	-	•	3.3 or 5.0	-40 to +150	MLF-32	•
NEW ► AS5247	Redundant 14-bit Rotary Position Sensor with Digital Angle (Interface) and ABI and UVW output (also PWM possible)	14-bit	SPI	Digital Angle (Interface) / ABI / UVW / PWM	15000	-	-	3.3 or 5.0	-40 to +150	MLF-40	•
AS5261	Redundant 12-bit Rotary Position Sensor with PWM output and overvoltage protection	12-bit	-	PWM	-	•	•	5.0	-40 to +150	MLF-16	•
AS5262	Redundant 12-bit Rotary Position Sensor with Linear analog output and overvoltage protection	12-bit	-	Linear analog	-	•	•	5.0	-40 to +150	MLF-16	•
AS5263	Redundant 12-bit Rotary Position Sensor with Linear analog or PWM output and overvoltage protection	12-bit	-	Linear analog / PWM	-	•	•	5.0	-40 to +150	MLF-32	•

Magnetic Linear Incremental Position Sensors

Part No.	Description	Resolution	Minium Pole Pair Length	Interfaces	Output	Max Speed	Overvoltage Protection	Redundant	Supply Voltage	Temperature Range	Package	AUT qualified
						rpm			V	°C		
AS5304A/B	160-step Linear Incremental Position Sensor with ABI output	160 step	4 mm	-	ABI	20 m/s	-	-	5.0	-40 to +125	TSSOP-20	-
AS5306A/B	160-step Linear Incremental Position Sensor with ABI output	160 step	2.4 mm	-	ABI	12 m/s	-	-	5.0	-40 to +125	TSSOP-20	-
AS5311	12-bit Linear Incremental Position Sensor with Digital Interface and PWM output	12-bit	2 mm	SSI	ABI PWM	0.65 m/s	-	-	3.3 or 5.0	-40 to +125	TSSOP-20	-
NSE-5310	12-bit Linear Incremental Position Sensor with Digital Interface and PWM output	12-bit	2 mm	I²C	PWM	0.65 m/s	-	-	3.3 or 5.0	-40 to +125	TSSOP-20	-
AS5510	10-bit Linear Absolute Field Sensor with Digital position (Interface) output	10-bit	-	I²C	Digital position (Interface) output	-	-	-	2.5 - 3.6	-30 to +85	WL-CSP	-

Magnetic Position Sensors

3D Absolute Position Sensors

Part No.	Description	Resolution	Interfaces	Output	Redundant	Supply Voltage	Temperature Range	Package	AUT Qualified
						V	°C		
AS5410	14-bit Linear Absolute Position Sensor with Digital (Interface) and PWM output	14-bit	SPI, PWM	Digital (Interface) / PWM	-	3.3	-40 to +105	TSSOP-14	-

EasyPoint™ Joystick Position Sensor

Part No.	Description	Resolution	Interfaces	Output	Overvoltage Protection	Redundant	Supply Voltage	Temperature Range	Package	AUT Qualified
							V	°C		
AS5013	Two-dimensional Magnetic Position Sensor with Digital Coordinates output	8-bit (X and Y)	I^2C	Digital Coordinates (interface)	-	-	2.7 - 3.6	-20 to +80	QFN-16	-

AEC-Q100 Automotive Qualification

The **Safe Launch Program** is ams' zero-defect-strategy that includes the AEC-Q100 automotive qualification, the **Burn-In** and the **Three-Temperature** testing procedures. The **Burn-In** procedure is an artificial, accelerated aging process and the **Three-Temperature** test provides data on reliability at lowest, highest, room temperature and the temperature specification limits of the respective devices. This program has led to improved screening by ensuring literally zero defects for a minimum of 100,000 parts during the ramp-up phase.

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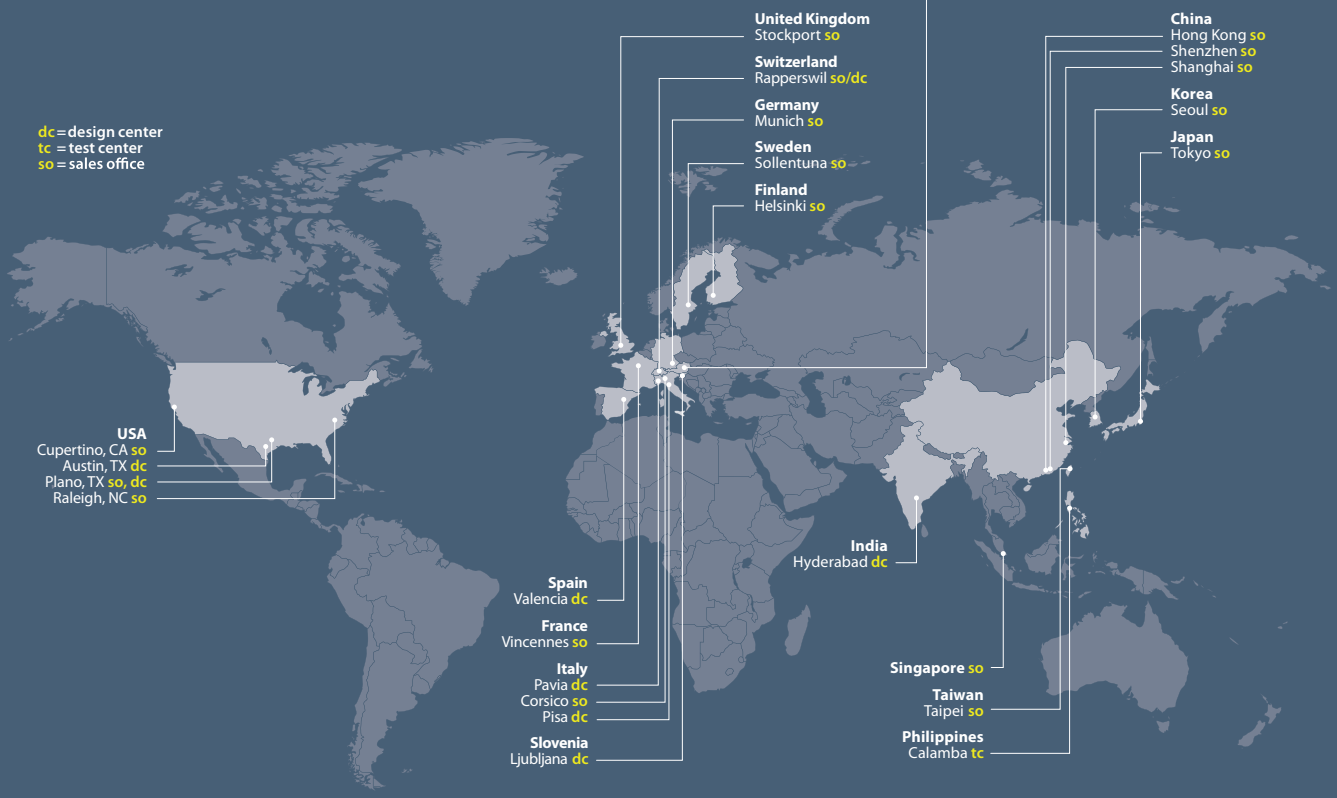

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