



Product Selector Interpolation ICs • Silicon for Motion®

	iC-NV iC-NVH	iC-TW4	iC-TW2	iC-MG iC-MQ	iC-MQF NEW	iC-NG	iC-NQC	iC-NQI	iC-MN	iC-MR NEW	iC-TW8
(H: half cycle Z)											
ADC	6 bit	8 bit	8 bit	8 bit / 9 bit	12 bit	8 bit	13 bit	13 bit	3x 13 bit S&H	13 bit S&H	16 bit
Conversion Rate	30 ns	20 Msps @ 5V	30 Msps @ 5V	5 Msps	20 Msps	800 kspss	1.7...8 Msps	1.7...8 Msps	140 kspss (1 Ch.)	250 kspss	250 kspss
Principle	flash	vector tracking	vector tracking	vector tracking	vector tracking	vector tracking	vector tracking	vector tracking	SAR	SAR	ATAN calc.
Latency	< 250 ns	< 1 µs	0.6 to 2.4 µs	200 ns	< 250 ns	1.2 µs	< 250 ns	< 250 ns	5 µs	2 µs	4 µs / 24 µs
Accuracy (deg/el.period)	5.6°	5.6°	4.2°	0.7°	0.13°	1.4°	0.35°	0.35°	0.1°	0.1°	0.1°
Max. Angle Resolution	64	256	256	200 / 400	4000	256	8192	8192	8192 (1 Ch.)	8192	fractional, up to 65536
Signal Conditioning											
Offset	-	• automatic	•	•	•	• by opamp	•	•	• 3x	•	by push-button
Amplitude	-	-	•	•	•	•	•	•	• 3x	•	• automatic
Phase	-	-	-	•	•	•	•	•	• 3x	•	• automatic
Linearization						• by conversion			• LED/MR bridge control	• LED/MR bridge control	• LUT
Stabilization				• LED/MR bridge control	• LED/MR bridge control				• LED/MR bridge control	• LED/MR bridge control	
Incr. Data (A,B,Z)	• +/- 4 mA	• +/- 6 mA diff.	• +/- 6 mA diff.	• RS422	• RS422	• +/- 4 mA	• +/- 4 mA	• +/- 4 mA	• up to 26+24 bit	• up to 26+24 bit	• +/- 4 mA
Absolute Data				test mode	test mode	• 8 bit	• up to 13+24 bit	• up to 13+24 bit	• up to 25+24 bit	• up to 26+24 bit	• 32 bit
Sin/Cos Output						test mode	test mode	test mode	• 1 Vpp driver (@ 100 Ohm)	• 1 Vpp driver (@ 100 Ohm)	
Serial I/O			2-wire SPI			BiSS C	BiSS (B), SSI	BiSS C	BiSS C	BiSS C, SPI	3/4-wire SPI
Parallel I/O						• 8 bit			• 8 bit	• 8 bit	
I2C (EEPROM)			On-chip EEPROM	• multi-master	• multi-master	•	•	•	•	•	
Multiturn Interface											
Period Counting						• 24 bit	• 24 bit	• 24 bit	• SSI	• BiSS C, SSI	
									• 24 bit with preset	• 24 bit with preset	• 16 bit
Setup	3 pins	4 ext. resistors	On-chip EEPROM, SPI	ext. EEPROM	ext. EEPROM	ext. EEPROM, µC	ext. EEPROM	ext. EEPROM	ext. EEPROM, µC	ext. EEPROM, µC	by 4 pins, µC, ext. EEPROM
Supply	5 V (10 mA)	3.3 to 5 V (8 mA)	3.3 to 5 V (8 mA)	5 V (12 mA)	5 V (18 mA)	5 V (25 mA max.)	5 V (35 mA max.)	5 V (35 mA max.)	5 V (45 mA)	5 V (30 mA)	3.1 to 5.5 V (12 to 25 mA)
Specials									Nonius calc.	safety diagnostics, temperature value (12 bit)	velocity value (14 bit)
Package	TSSOP20	QFN24 4x4	QFN24 4x4	TSSOP20	TSSOP20	SO28 SSOP28 5.3	TSSOP20	TSSOP20	QFN48 7x7	QFN48 7x7	QFN48 7x7

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