Product Selector Interpolation ICs • Silicon for Motion®

	iC-NV iC-NVH	iC-TW2	iC-TW28 NEW	iC-MG iC-MQ	iC-MQF	iC-PI NEW	iC-NG	iC-NQC	iC-NQI	iC-MN	iC-MNF NEW	iC-MR3 NEW	iC-TW8
	(H: half cycle Z)												
ADC	**6 bit**	**8 bit**	**10 bit**	**8 bit / 9 bit**	**12 bit**	**12 bit**	**8 bit**	**13 bit**	**13 bit**	**3x 13 bit S&H**	**3x 14 bit S&H**	**13 bit S&H**	**16 bit**
Conversion Rate	30 ns	30 Msps @ 5V	3.1 Msps	5 Msps	20 Msps	40 Msps	800 ksps	1.7...8 Msps	1.7...8 Msps	140 ksps (1 Ch.)	210 (280) ksps (1 Ch.)	250 ksps	250 ksps
Principle	flash	vector tracking	ATAN calc.	vector tracking	vector tracking	vector tracking	vector tracking	vector tracking	vector tracking	SAR	SAR	SAR	ATAN calc.
Latency/Lag	< 250 ns	0.6 to 2.4 µs	1.5 µs / < 1 µs with lag recovery	200 ns	< 250 ns	< 250 ns	1.2 µs	< 250 ns	< 250 ns	5 µs	3 µs (2 µs)	2 µs	24 µs / < 4 µs w. lag recovery
Accuracy (deg/el.period)	5.6°	4.2°	0.7°	0.7°	0.13°	0.13°	1.4°	0.35°	0.35°	0.1°	0.1°	0.1°	0.1°
Max. Angle Resolution	64	256	1024 fractional /1...8	200 / 400	4000	4000 / 4096	256	8192	8192	8192 (1 Ch.)	16384 (1 Ch.)	8192	fractional, up to 65536
Signal Conditioning			by push-button				• by opamp						by push-button
Offset	-	•	• automatic	•	•	•		•	•	• 3x	• 3x	•	• automatic
Amplitude	-	•	• automatic	•	•	•		•	•	• 3x	• 3x	•	• automatic
Phase	-	-	• automatic	•	•	•		•	•	• 3x	• 3x	•	• automatic
Linearization							• by conversion						• LUT
Stabilization			• LED/MR bridge control	• LED/MR bridge control	• LED/MR bridge control	• 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.	• RS422	• RS422	• RS422	• RS422	• +/- 4 mA	• +/- 4 mA	• +/- 4 mA				• +/- 4 mA
Comm. Data (U,V,W)		• 1 CPR	• 1 to 32 CPR			• 1 to 8 CPR							
Absolute Data			• 10+14 bit			• 12 bit	• 8 bit	• up to 13+24 bit	• up to 13+24 bit	• up to 25+24 bit	• up to 26+24 bit	• up to 26+24 bit	• 32 bit
Sin/Cos Output				test mode	test mode	test mode		test mode	test mode	• 1 Vpp (100 Ω)	• 1 Vpp (100 Ω)	• 1 Vpp (100 Ω)	
Serial I/O		2-wire SPI	4-wire SPI, EncoderLink®			I2C		BiSS C, SSI	BiSS (B)	BiSS C, SSI	BiSS C, SSI, SPI	BiSS C, SSI, SPI	3/4-wire SPI
Parallel I/O							• 8 bit					• 8 bit	
I2C Master				• multi-master	• multi-master	• multi-master	•	•	•	•	•	•	•
On-Chip EEPROM		•	•										
Multiturn Interface			via MCU			• index inp.				• BiSS C, SSI	• BiSS C, SSI	• BiSS C, SSI	
Period Counting			• 14 bit with preset by MCU			• 15 bit	• 24 bit	• 24 bit	• 24 bit	• 24 bit with preset	• 24 bit with preset	• 24 bit with preset	• 16 bit
Setup	3 pins	On-chip EEPROM, SPI	by pins, SPI, EEPROM, EncoderLink®	ext. EEPROM	ext. EEPROM	ext. EEPROM	ext. EEPROM, µC	ext. EEPROM	ext. EEPROM	ext. EEPROM	ext. EEPROM	ext. EEPROM, µC	by 4 pins, µC, ext. EEPROM
Supply	5 V (10 mA)	3.3 to 5 V (8 mA)	3.3 V (25 mA)	5 V (12 mA)	5 V (18 mA)	5 V (28 mA)	5 V (25 mA max.)	5 V (35 mA max.)	5 V (35 mA max.)	5 V (45 mA)	5 V (60 mA)	5 V, 2.5 to 5V (34 mA)	3.1 to 5.5 V (12 to 25 mA)
Specials			touch probe hold register							Nonius calc.	Nonius calc., 2 GPIO pins	safety diagnostics, temperature value (12 bit)	velocity value (14 bit)
Package	TSSOP20	QFN24 4x4	QFN32 5x5	TSSOP20	TSSOP20	TSSOP20	SO28 SSOP28 5.3	TSSOP20	TSSOP20	QFN48 7x7	QFN48 7x7	QFN48 7x7	QFN48 7x7

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