Product Selector Signal Conditioning & Monitoring ICs ● Silicon for Motion®

Type	iC-MSA	iC-MSB SAFETY	iC-MSB2	iC-TW3	iC-RC1000 Signal Safety Monitoring	iC-WT
ADC	n/a	n/a	see iC-MSB	n/a	n/a	hysteresis comparator
Conversion Rate						
Principle	pure analog	pure analog		pure analog	analog	flash
Latency	< 1 µs	< 1 µs		< 1 µs		< 1 µs
Accuracy	**13 bit**	**13 bit**		**typ. 10 bit**		
[degree/signal period]	0.04°	0.04°		0.35°		
Angle Resolution						
Interpolation Factors	in = out	in = out		in = out		x1
Inputs	diff. / single-ended current >2.5 µA, voltage >20 mV	diff. / single-ended current >2.5 µA, voltage >20 mV		differential voltage, 10 mV to 1.3 Vp	4x single-ended, 0 V to 5 V	photocurrent, 0 to 600 nA (common cathode)
Max. Input Frequency	20 kHz	500 kHz		1 MHz	Lissajous (1 Vpeak-peak) monitoring to 100 kHz Common mode (DC) monitoring to 500 kHz	500 kHz
Signal Conditioning						
Offset	●	●		● automatic	-	-
Amplitude	● +auto-gain control	●		● automatic	-	-
Phase	●	●		-	-	-
CMOS/TTL Outputs	n/a	n/a		n/a	1x OK, 1x ERR (4 mA push-pull)	3x TTL (A, B, Z)
RS422 Driver						
A/B Outp. Frequency	20 kHz sine	500 kHz sine		1 MHz sine		500 kHz
Index Signal	analog/comparated	analog/comparated		analog/comparated		AND gated
U/V/W Commut. Sig.						-
Min. Phase Distance						-
Analog Outputs	● 1 Vpp @ 100 Ω	● 1 Vpp @ 100 Ω		● 1 Vpp @ 100 Ω ● 2 Vpp @ 1 kΩ	-	
I/O Interface	I2C multi-master	I2C multi-master		1 wire, I2C	-	
Setup	ext. EEPROM, µC	ext. EEPROM, µC		ext. EEPROM	-	external resistors
Supply	4.3 V to 5.5 V	4.3 V to 5.5 V		3.0 V to 5.5 V	5 V +/- 10%	5 V +/- 10%
Pin Protection	● reverse polarity	● reverse polarity				
	● thermal shutdwn.	● thermal shutdwn.				
Temperature Sensor				● int./ext.		
OTR Ta [°C]	-25 +100, -40 +115	-25 +100, -40 +115		-40 to +125	-40 to +110	-25(-40) to +125
Chip Tj [°C]	-40 to +125	-40 to +125		-40 to +125	-40 to +125	-40 to +125
Package	TSSOP20-TP	TSSOP20-TP TSSOP20	TSSOP20	QFN32 5x5	MSOP10 3x3	SO16N
Special Features		LED/MR bridge controller, Certified for safety applications according to IEC 61508, DIN EN 13849	output multiplexer	LUT temperature compensation	Certified for safety applications according to DIN EN61800-5-2 (drive controls), IEC 61508, DIN EN 13849	LED control