



RM22

Magnetic Encoders

OPERATING PRINCIPLE

One single diametraly polarised magnet activates the Hall sensors integrated in the ASIC. Absolute-Binary Parallel or Synchro Serial, Incremental-Quadrature or Sin/Cos signals are available on the encoder outputs. Electronics is incorporated in aluminium housing with high IP ratings. Stainless steel magnet carrier is mounted on 6 mm shaft diameter.



Specifications

- Max. rotating speed 30000 RPM
- Encoder weight 36 g (without cable)
- Operating temperature 0°C to +70°C
- Hollow shaft diameter 6 mm
- Vibration 50 g, (10 to 2000 Hz)
- Shock 200 g, 11ms
- Protection factor IP 65

Features

- heavy duty
- shock resistant
- easy mounting
- contactless encoding
- high IP rating
- different outputs
- modular, without ballbearings

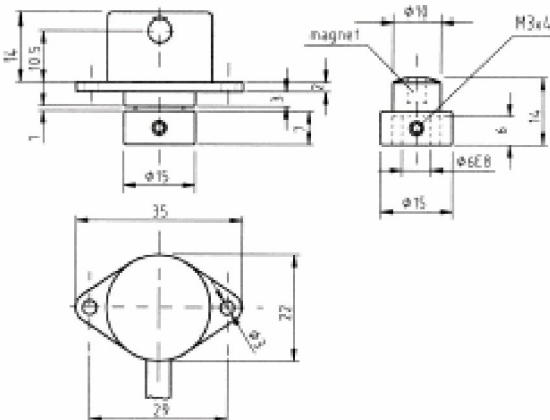
Applications

- industrial automation
- motor comutation
- automotive

Models

- RM22-P** Absolute 9 bit binary encoder parallel output
- RM22-S** Absolute 9 bit binary encoder serial output
- RM22-I** Incremental, 128 Impulses per turn
- RM22-A** Analog Sine - Cosine output

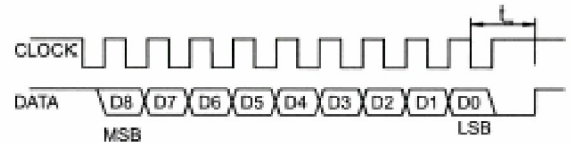
Dimensions



RM22-S Binary Synchro-Serial Outputs

Power supply	5V DC / 20 mA
Resolution	max. 9bit (512 state / rev.)
Hysteresis	0.5 bit at 9 bit resolution
Accuracy	± 1bit at 9 bit resolution
Repeatability	< 0.1bit
Data outputs	Serial data (RS422)
Data inputs	Clock (RS422)
Cable length	up to 100 m (at 1MHz)

Timing diagram

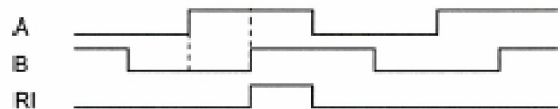


t_r : 20-40µs
Frequenza clock: ≤ 1 MHz

RM22-I Incremental Outputs

Power supply	5V DC / 30 mA
Output TTL signals	A, B, RI, , , (RS 422)
Max. cable length	50 m

Timing diagram



RM22-A Analogue Sinusoidal Outputs

Power supply	$V_{dd}=5$ VDC / 30 mA
Outputs	Buffered Sine & Cosine signals
	Signals amplitude $1V_{pp} \pm 0,1$ mV
	Signals offset $V_{dd} / 2 \pm 5$ mV

Signal characteristic

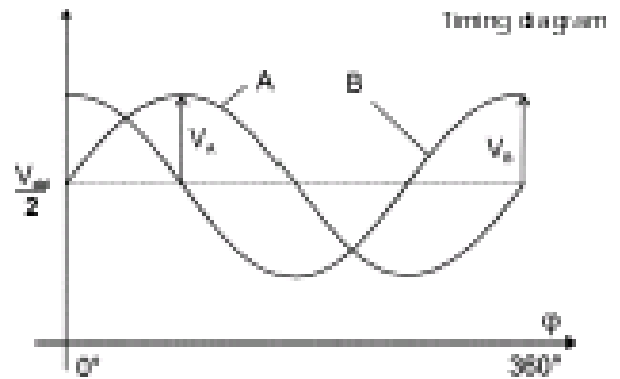
$$V_A - V_B = 5mV$$

$$V_{0A} - V_{0B} = 5mV$$

$$A-B = 0,1^\circ$$

V_A = Sine amplitude
 V_B = Cosine amplitude
 V_{A0} = Sine offset
 V_{B0} = Cosine offset

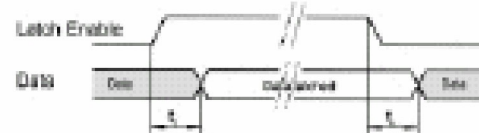
Max output frequency	500 Hz
Max cable length	3m



RM22-P Binary Parallel Outputs

Power supply	5V DC / 20 mA
Output voltage	$V_H > 4V$ per $-I_H < 3mA$ $V_L < 1V$ per $I_L < 3mA$
Resolution	max. 9bit (512 state / rev.)
Hysteresis	0.5 bit at 9 bit resolution
Accuracy	± 1bit at 9 bit resolution
Repeatability	< 0.1bit
Output signals	D0 (LSB) ÷ D8 (MSB)
Data inputs	LE - latch enable input signal, active high
Cable length	30m (max.)

Timing diagram



t_r = tempo di reazione < 1µs

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