

RE22 series rotary encoders



EMC compliance

This encoder system conforms to the relevant harmonised European standards for electromagnetic compatibility as detailed below. Encoder systems with double-screened cable (high EMC grade variants) meet criteria A for all of the requirements of the given standards, while encoder systems with single-screened cable (standard EMC grade variants) meet either criteria A or B for each of these requirements.

BS EN 61326

Further information

For further information relating to the installation of RE22 encoders see also the RE22 Data sheet. This can be downloaded from our website www.rls.si.

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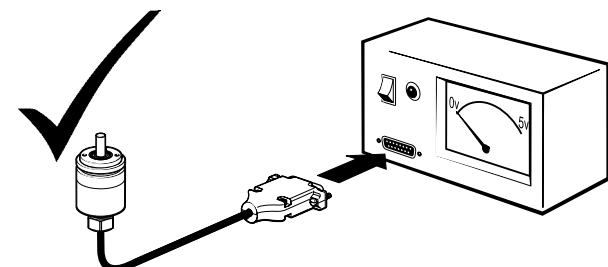
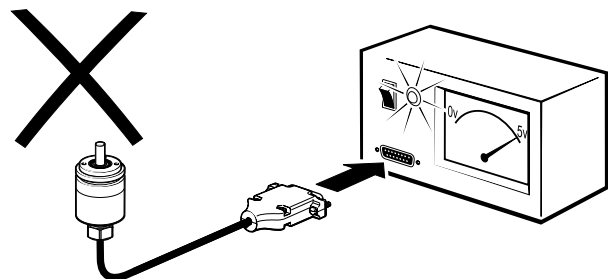
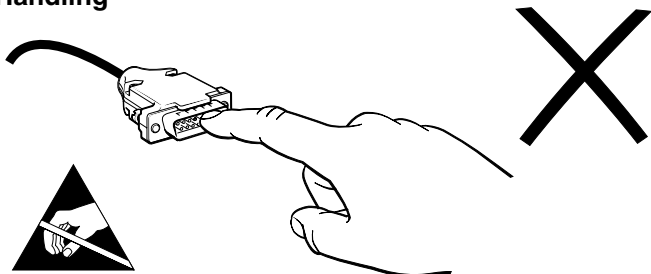
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Handling



General specifications

Power supply	5 V ± 5%	RE22 A/B/P/V 20 mA
		RE22 I/S 23mA - 9bit, 35mA for all other resolutions
		NOTE: Current consumption figures refer to unterminated encoders. When terminated with 120 Ω, RE22S will draw an additional 25 mA, while RE22I will draw an additional 25 mA per channel pair (A+, A-). IP53 (IP64/68 option available)
Sealing		-25 °C to +85 °C
Operating temperature		95% maximum relative humidity (non-condensing) (BS EN 61010-1)
Humidity	storage	80% maximum relative humidity (non-condensing) (BS EN 61010-1)
	operating	500 m/s ² BS EN 60068-2-7:1993 (IEC 68-2-7:1983)
Acceleration	operating	1000 m/s ² , 6 ms, ½ sine BS EN 60068-2-27:1993 (IEC 68-2-27:1987)
Shock	non-operating	100 m/s ² , 55 Hz to 2000 Hz BS EN 60068-2-6:1996 (IEC 68-2-6:1995)
Vibration	operating	RE22 inc. 1 m cable no connector IP53 -axial cable 68 g IP53 -radial cable 60 g IP64/68 -axial cable 73 g
Mass		Outside diameter 5 mm Maximum cable length 3 m (RE22 A), 20 m (RE22B), 20 m (RE22V) 30 m (RE22 P), 50 m (RE22 I), 100 m (RE22 S at 1MHz).
Cable		

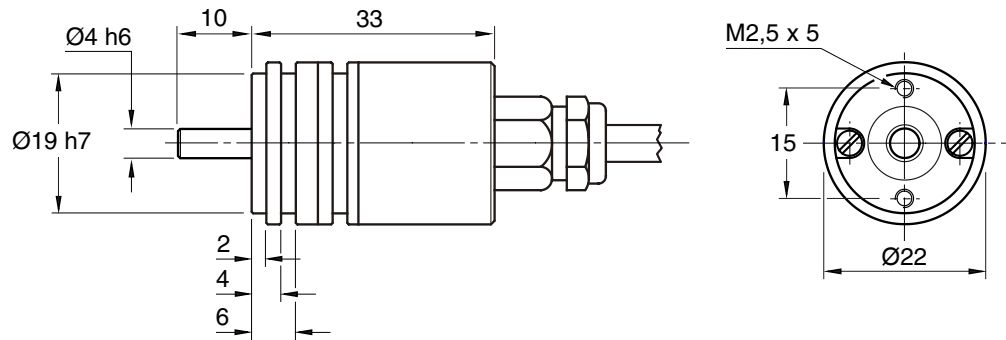
IMPORTANT: Power to RE22 encoders must be supplied from a 5V DC SELV supply complying with the essential requirements of EN (IEC) 60950 or similar specification.

The RE22 series encoders have been designed to the relevant EMC standards, but must be correctly integrated to achieve EMC compliance. In particular, attention to shielding arrangements is critical.

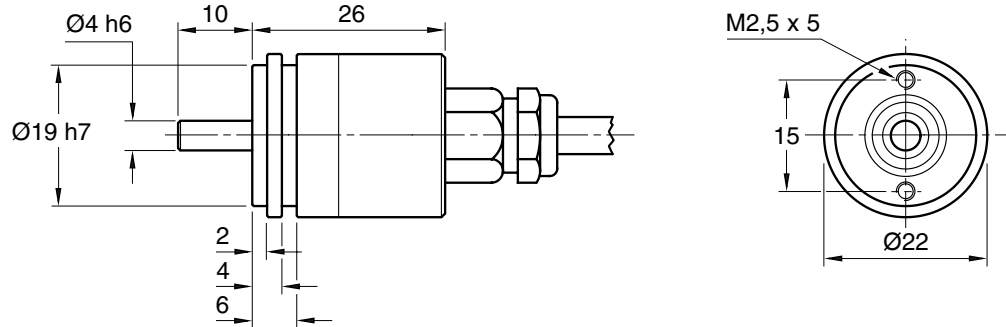
RE22 dimensions

Dimensions and tolerances in mm

IP64/68



IP53



IP53 (Alternative side cable entry)

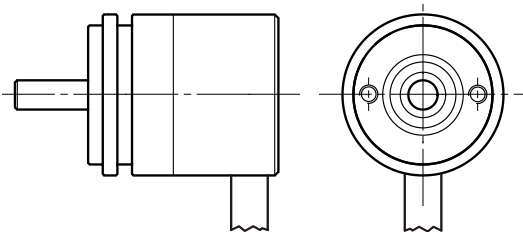


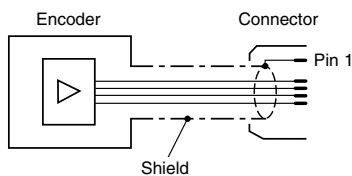
Table of expected bearing life ratings in hours

Speed (rpm)	Rad. load 5N	Rad. load 10N	Rad. load 15N	Rad. load 20N
500	205,401	98,455	54,569	33,333
1,000	102,700	49,227	27,285	16,667
2,000	51,350	24,613	13,642	8,333
5,000	20,540	9,845	5,457	3,333
10,000	10,270	4,923	2,728	1,667
15,000	6,847	3,282	1,819	1,111
20,000	5,135	2,461	1,364	833

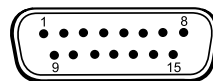
Maximum recommended shaft loads: radial 20N, axial 10N

Connections

Standard EMC single screen cable



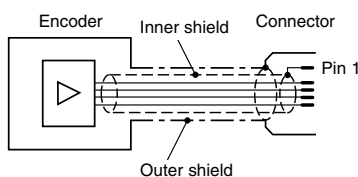
RE22 P



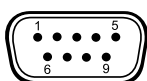
15 pin D plug

Pin Nr.	Function	Wire colour Std EMC	Wire colour High EMC	Pin Nr.	Function	Wire colour Std EMC	Wire colour High EMC
1	Shield-see connection diagram			9	D2	Black	Black
2	D8	White	White	10	D1	Violet	Violet
3	D7	Brown	Brown	11	D0	Grey/Pink	Orange
4	D6	Green	Green	12	NC	—	—
5	D5	Yellow	Yellow	13	NC	—	—
6	D4	Grey	Grey	14	LE	Red/Blue	Clear
7	D3	Pink	Pink	15	GND	Blue	Blue
8	V _{dd}	Red	Red				

High EMC double screen cable



RE22 S/I/A/B/V



9 pin D plug

Pin Nr.	Function	Wire colour*	Function	Wire colour*	Function	Wire colour Standard EMC	Wire colour High EMC	Function	Wire colour*	Function	Wire colour Standard EMC	Wire colour High EMC
1	Shield-see connection diagram		Shield-see connection diagram		Shield-see connection diagram			Shield-see connection diagram		Shield-see connection diagram		
2	Clock	White	Ri	White	V _A	Black	Green	V _A +	Green	NC	—	—
3	Clock-	Brown	B	Green	V _B	Brown	Brown	V _B +	Brown	V _{out}	Black	Green
4	NC	—	A	Grey	NC	—	—	NC	—	NC	—	—
5	V _{dd}	Red	V _{dd}	Red	V _{dd}	Red	Red	V _{dd}	Red	V _{dd}	Red	Red
6	Data	Green	Ri-	Brown	NC	—	—	V _A -	Yellow	NC	—	—
7	Data-	Yellow	B-	Yellow	NC	—	—	V _B -	White	NC	—	—
8	NC	—	A-	Pink	NC	—	—	NC	—	NC	—	—
9	GND	Blue	GND	Blue	GND	Orange	Blue	GND	Blue	GND	Orange	Blue

*Both Standard and High EMC