



RE/REM Hollow Shaft INCREMENTAL ROTARY ENCODERS

- *Incremental rotary encoders with or without zero pulse*
- *Pulses per revolution: 2 to 12500*
- *Aluminium housing*
- *Several configurations available*

MECHANICAL VERSIONS			
RE400 • REM400	RE470 • REM470	RE410 • REM410	RE450 • REM450
Body Ø: 58 mm Flange Ø: 53.5 mm Fixing holes on Ø 30 mm Motor coupling through hollow shaft Ø 6, 8 or 10 mm	Body Ø: 58 mm Flange Ø: 72 mm Fixing holes on Ø 63.5 mm Motor coupling through hollow shaft Ø 6, 8 or 10 mm	Body Ø: 58 mm Flange Ø: 63 mm Hollow shaft for motor coupling Ø 8, 10, 12, 14 or 15 mm Antirotational fixing	Body Ø: 58 mm Flange Ø: 63 mm Hollow shaft for motor coupling Ø 8, 10, 12, 14 or 15 mm Fixing by elastic support
PULSES PER REVOLUTION Series RE		Magnetic series REM	
2, 5, 10, 15, 20, 25, 27, 30, 40, 50, 60, 80, 100, 115, 125, 150, 180, 200, 250, 256, 300, 360, 500, 600, 720, 750, 800, 900, 1000, 1200, 1250, 1440, 1500, 1800, 2000, 2400, 2500, 2700, 2880, 3000, 3600, 4000, 4500, 5000, 7200, 8000, 9000, 10000, 12500		8, 10, 16, 20, 25, 32, 40, 50, 64, 80, 100, 125, 128, 200, 250, 256, 400, 500, 512, 1024, 2048	

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS		
RE/REM	400 • 470	410 • 450
• Materials: case shaft	Aluminium AISI 303 steel	
• Weight	400 g circa	
• Hollow shaft diameter	6, 8, 10 mm	8, 10, 12, 14, 15 mm
• Revolutions/minute	6000 continuos/10000 temporary	
• Starting torque	≤0,8 Ncm	
• Inertia	≤25 g cm ²	
• Max load	80 N axial/100 N radial	
• Vibration resistance (10÷2000 Hz)	100 m/sec ²	
• Shock resistace (11 ms)	50 G	
• Protection degree	IP65	
• Operating temperature	-10 ÷ 70°C	
• Stocking temperature	-20 ÷ 80°C	

ELECTRICAL & OPERATING SPECIFICATIONS	
• Pulse code	Incremental
• Pulses per revolution	RE 2 ÷ 12500 REM 8÷2048
• Zero reference pulse	one pulse/revolution
• Output signals	Two square waves 90° ±15° out of phase – Zero pulse width: 90°±15°
• Electronic outputs	push-pull, NPN open collector*, 5Vdc or 5/30 Vdc line driver signals protected against short circuits
• Supply voltage	5/30 Vdc protection against polarity reversal
• Absorption	30÷80 mA max
• Max frequency	100 KHz / 200 KHz for ppr>1250
• Connections	Axial or radial cable 3 m long /1 m for line driver output Axial or radial MS connector, 7-pin/10-pin for line driver output

* NPN open collector: series **RE** only



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RE/REM470



RE/REM400



RE/REM470

CONNECTIONS

Push Pull – Open Collector NPN				Line Driver					
SIGNALS	7-pin connector		Cable colours	SIGNALS	7-pin connector		Cable colours	10-pin connector	Cable colours
	DIAGRAM 1				DIAGRAM 3			DIAGRAM 4	
	DIAGRAM 2				without 0 pulse			with 0 pulse	
Out 1	A	C	White	Out 1	A	White	A	White	
Out 2	B	E	Green	Out 2	B	Green	B	Green	
Out Z <i>RE/REM4x1</i>	C	D	Brown	Out Z			C	Grey	
+ Vdc	D	F	Red	+ Vdc	D	Red	D	Red	
0V	F	A	Blue	+ Vdc			E	Red	
Non-connected	E	B		0V	F	Blue	F	Blue	
Non-connected	G	G		Out 1 ⁻	C	Brown	G	Brown	
Earth			Shield	Out 2 ⁻	E	Yellow	H	Yellow	
				Out Z ⁻			I	Pink	
				Non-connected	G		J	Shield	

ORDERING INFORMATION

RE400	C	1000	5/30	R	6	PP	2
							<u>CONNECTION DIAGRAM</u> 2 – 4
							<u>OUTPUT SIGNALS</u> PP Push-pull OC NPN Open Collector (RE only) LD Line-driver
							<u>HOLE Ø</u> 6 -8 -10 –12 - 14- 15 mm
							<u>CONNECTIONS POSITIONS</u> A Axial R Radial
							<u>SUPPLY VOLTAGE</u> 5/30 Vdc
							<u>PPR</u> RE 2 ÷ 12500 REM 8 ÷ 2048
							<u>CONNECTION OUTLET</u> - Connector C Cable

VARIATIONS ADMITTED WITHOUT NOTICE

TYPE

RE400 – RE470 – RE410 – RE450 no zero pulse
RE401 – RE471 – RE411 – RE451 zero pulse
REM400 – REM470 – REM410 – REM450 no zero pulse
REM401 – REM471 – REM411 – REM451 zero pulse

Hollow shaft alternative encoder series:**REC440 • REC450****Compact encoders 2÷12500 ppr**

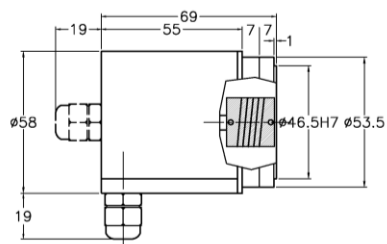
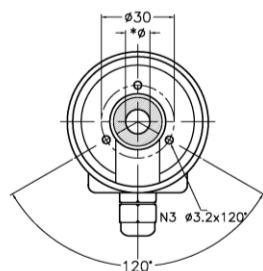
Body Ø 58 mm, h 38 mm • M12 connector or cable outlet • Aluminium housing • UL Listed models available

[Encoder REC](#)

DIMENSIONS

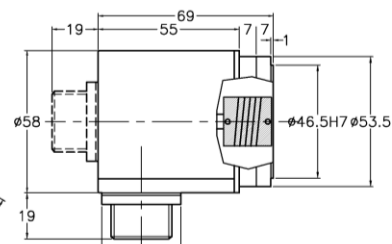
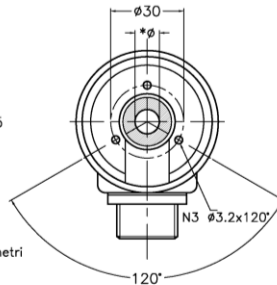
RE/REM400

RE400 uscita serracavo
RE400 cable outlet



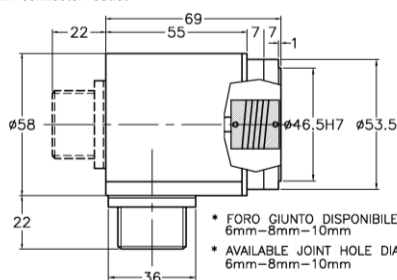
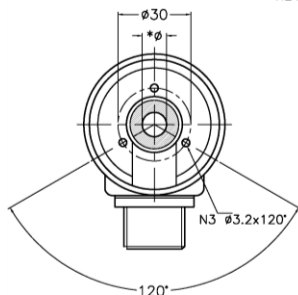
- * FORO GIUNTO DISPONIBILE nei diametri 6mm-8mm-10mm
- * AVAILABLE JOINT HOLE DIAMETERS 6mm-8mm-10mm

RE400 uscita connettore 7 poli
RE400 7pin connector outlet



- * FORO GIUNTO DISPONIBILE nei diametri 6mm-8mm-10mm
- * AVAILABLE JOINT HOLE DIAMETERS 6mm-8mm-10mm

RE400 uscita connettore 10 poli
RE400 10pin connector outlet

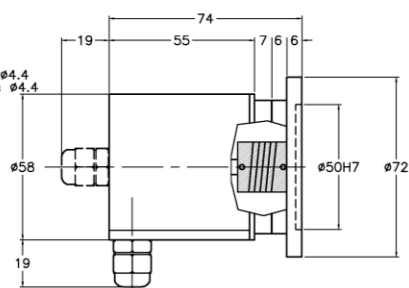
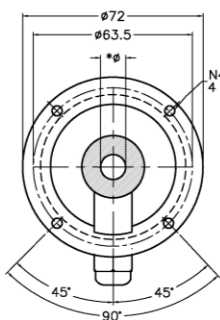


- * FORO GIUNTO DISPONIBILE nei diametri 6mm-8mm-10mm
- * AVAILABLE JOINT HOLE DIAMETERS 6mm-8mm-10mm

Ref. M148V

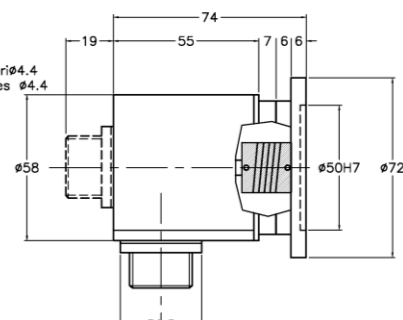
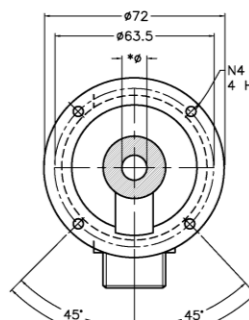
RE/REM470

RE470 uscita serracavo
RE470 cable ouput



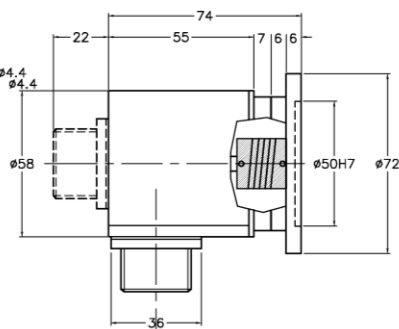
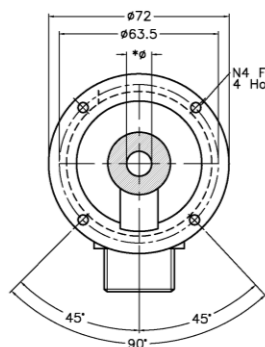
- * FORO GIUNTO DISPONIBILE nei diametri 6mm-8mm-10mm
- * AVAILABLE JOINT HOLE DIAMETERS 6mm-8mm-10mm

RE470 uscita connettore 7p
RE470 7pin ouput connector

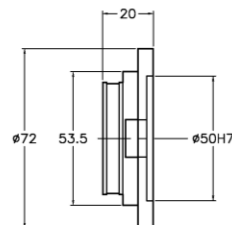


- * FORO GIUNTO DISPONIBILE nei diametri 6mm-8mm-10mm
- * AVAILABLE JOINT HOLE DIAMETERS 6mm-8mm-10mm

RE470 uscita connettore 10p
RE470 10 pin ouput connector



- * FORO GIUNTO DISPONIBILE nei diametri 6mm-8mm-10mm
- * AVAILABLE JOINT HOLE DIAMETERS 6mm-8mm-10mm

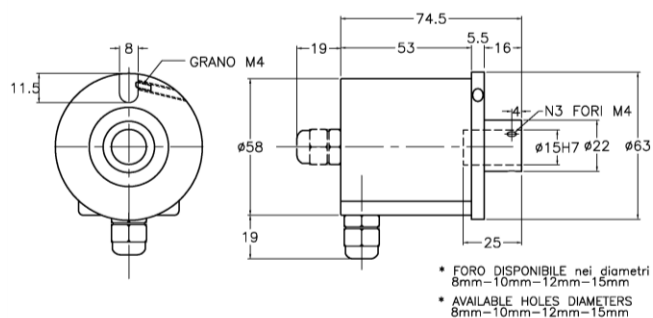


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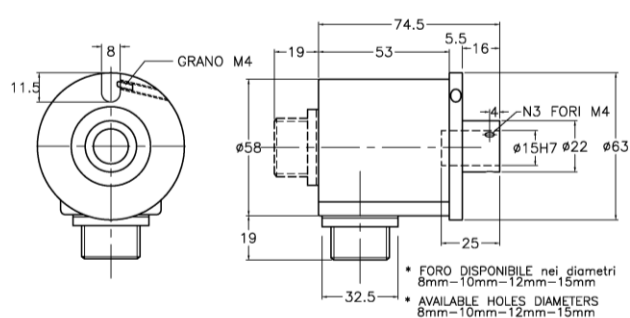
DIMENSIONS

RE/REM410

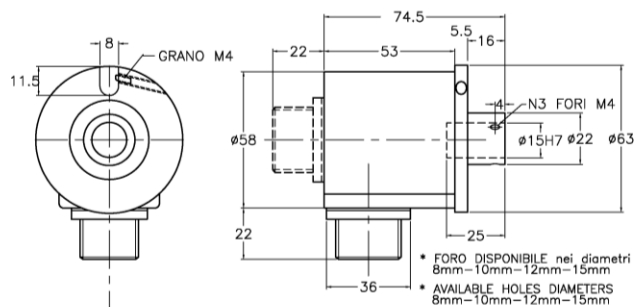
RE410 uscita serracavo
RE410 cable outlet



RE410 uscita connettore 7 poli
RE410 7pin connector outlet



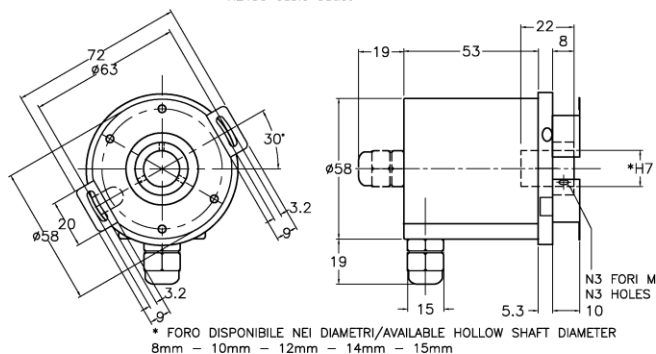
RE410 uscita connettore 10 poli
RE410 10pin connector outlet



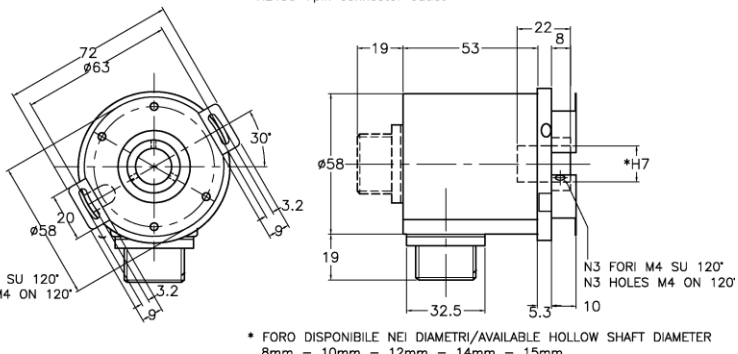
RE/REM450

Ref. M1484

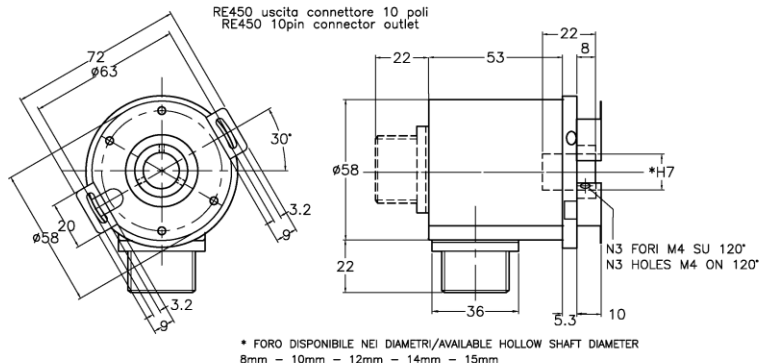
RE450 uscita serracavo
RE450 cable outlet



RE450 uscita connettore 7 poli
RE450 7pin connector outlet



RE450 uscita connettore 10 poli
RE450 10pin connector outlet



Ref. M2045

REFERENCES

Further information and dimensional drawings at the following links:

<https://www.elap.it/incremental-encoders/hollow-shaft-encoders/>
<https://www.elap.it/incremental-encoders/encoder-rem/>



Encoder RE4xx Encoder REM



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