



REREM520



RE/REM540



RE/REM510

# RE/E Round Flange REM/EM INCREMENTAL ROTARY ENCODERS

- Incremental rotary encoders with or without zero pulse
- Pulses per revolution: 2 to 12500
- Aluminium housing (series RE/REM) or ABS case (series E/EM)
- Several configurations available

| MECHANICAL VERSIONS  |                           |  |                |
|--|---------------------------|--|----------------|
| RE/E520 • REM/EM520  | RE/E540 • REM/EM540       | RE/E510 • REM/EM510  | RE/REM530      |
| Body Ø: 58 mm  | Body Ø: 58 mm             | Body Ø: 58 mm  | Body Ø: 58 mm  |
| Flange Ø: 58 mm  | Flange Ø: 58 mm           | Flange Ø: 58 mm  | Flange: RE0444 |
| Servo coupling   | Centering mask Ø 36 mm    | Servo coupling   | Shaft Ø 11 mm  |
| Centering mask Ø 50 mm   | Shaft Ø 6, 8, 9.52, 10 mm | Centering mask Ø 31,75 mm  | Aluminium      |
| Shaft Ø 6, 8, 9.52, 10 mm  |                           | Shaft Ø 6, 8, 9.52, 10 mm  |                |
| Encoder series <b>RE/REM</b> : Aluminium housing   |                           | Encoder series <b>E/EM</b> : ABS plastic case  |                |
| PULSES PER REVOLUTION  |                           |  |                |
| Series RE/E  |                           | Magnetic series REM/EM   |                |
| 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 520 • 540 • 510  | RE/REM530 |
| • Materials: case shaft                   | Aluminium ( <b>RE/REM</b> ) / ABS ( <b>E/EM</b> )<br>AISI 303 steel |           |
| • Weight                                  | <b>RE/REM</b> 400 g ca / <b>E/EM</b> 280 g ca                       |           |
| • Shaft Ø                                 | 6, 8, 9.52, 10 mm   | 11 mm     |
| • Revolutions/minute                      | 6000 continuous/10000 temporary*                                    |           |
| • Starting torque                         | ≤0,8 Ncm  |           |
| • Inertia                                 | ≤25 g cm <sup>2</sup>   |           |
| • Max load                                | 80 N axial/100 N radial   |           |
| • Vibration resistance (10÷2000 Hz)       | 100 m/sec <sup>2</sup>  |           |
| • Shock resistance (11 ms)                | 50 G  |           |
| • Protection degree                       | IP64 / optional IP65 with sealing ring*                             |           |
| • Operating temperature                   | -10 ÷ 70°C  |           |
| • Stacking temperature                    | -20 ÷ 80°C  |           |

\*Max operating speed with IP65 sealing ring applied on the shaft: 3000 rpm

| ELECTRICAL & OPERATING SPECIFICATIONS |   |
|---------------------------------------|---|
| • Pulse code                          | Incremental   |
| • Pulses per revolution               | <b>RE/E</b> 2 ÷ 12500<br><b>REM/EM</b> 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 8/24Vdc line driver signals protected against short circuits                              |
| • Supply voltage                      | 5Vdc or 8/24Vdc protection against polarity reversal  |
| • Absorption                          | 30÷80 mA max  |
| • Max frequency                       | 100/200 KHz   |
| • Connections                         | Axial or radial cable 3 m long /1 m for line driver output<br>Axial or radial MS connector, 7-pin/10-pin for line driver output** |

\* NPN open collector: series **RE/E** only

\*\*The encoder configuration: zero pulse + line drive output +radial connector outlet can only be supplied with aluminium case (series **RE/REM**)



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RE/REM530



E/EM540



E/EM520

## CONNECTIONS

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

## ORDERING INFORMATION

|              |          |             |             |          |          |           |  |
|--------------|----------|-------------|-------------|----------|----------|-----------|--|
| <b>RE520</b> | <b>C</b> | <b>1000</b> | <b>8/24</b> | <b>R</b> | <b>6</b> | <b>PP</b> | <b>2</b>   |
|              |          |             |             |          |          |           | <b>CONNECTION DIAGRAM</b><br>2 – 4   |
|              |          |             |             |          |          |           | <b>OUTPUT SIGNALS</b><br>PP Push-pull<br>OC NPN Open Collector (RE/E only)<br>LD Line-driver |
|              |          |             |             |          |          |           | <b>SHAFT Ø</b><br>6 - 8 – 9.52 - 10 RE/REM530: 11 mm   |
|              |          |             |             |          |          |           | <b>CONNECTIONS POSITIONS</b><br>A Axial<br>R Radial  |
|              |          |             |             |          |          |           | <b>SUPPLY VOLTAGE</b><br>8/24 Vdc<br>5 Vdc   |
|              |          |             |             |          |          |           | <b>PPR</b><br>RE/E 2 ÷ 12500<br>REM/EM 8 ÷ 2048  |
|              |          |             |             |          |          |           | <b>CONNECTION OUTLET</b><br>- Connector<br>C Cable   |
| <b>TYPE</b>  |          |             |             |          |          |           | <i>VARIATIONS ADMITTED WITHOUT NOTICE</i>  |

RE/REM520 – RE/REM540 – RE/REM510 – RE/REM530 Aluminium case, no zero pulse

RE/REM521 – RE/REM541 – RE/REM511 – RE/REM531 Aluminium case, zero pulse

E/EM520 – E/EM540 – E/EM510 Plastic case, no zero pulse

E/EM521 – E/EM541 – E/EM511 Plastic case, zero pulse

### REC 520/540/530

#### Compact encoders

2÷12500 ppr

Body Ø 58 mm, h 38 mm • M12 connector or cable outlet • Aluminium housing



### REV 520/540

#### Glass disk encoders

1000÷50000 ppr

Body Ø 58 mm • Aluminium housing



### REP/EP 520/540/510/530

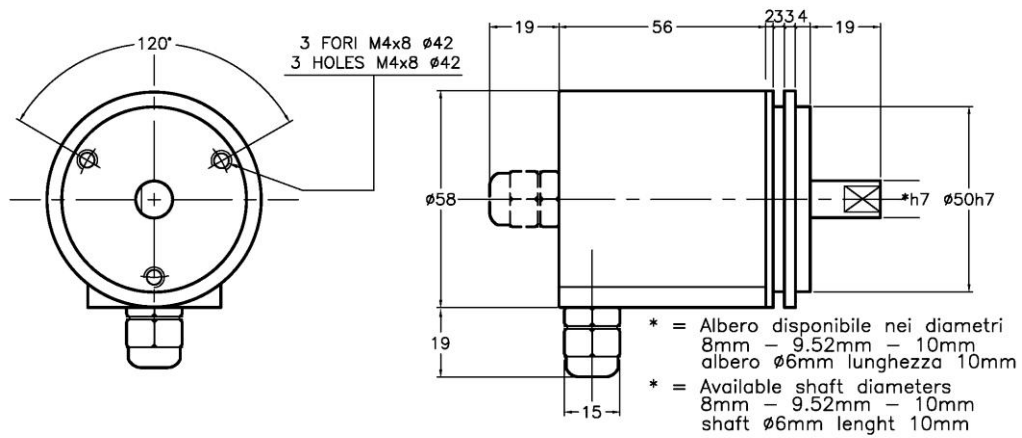
#### Programmable encoders

8÷2048 ppr settable by the user

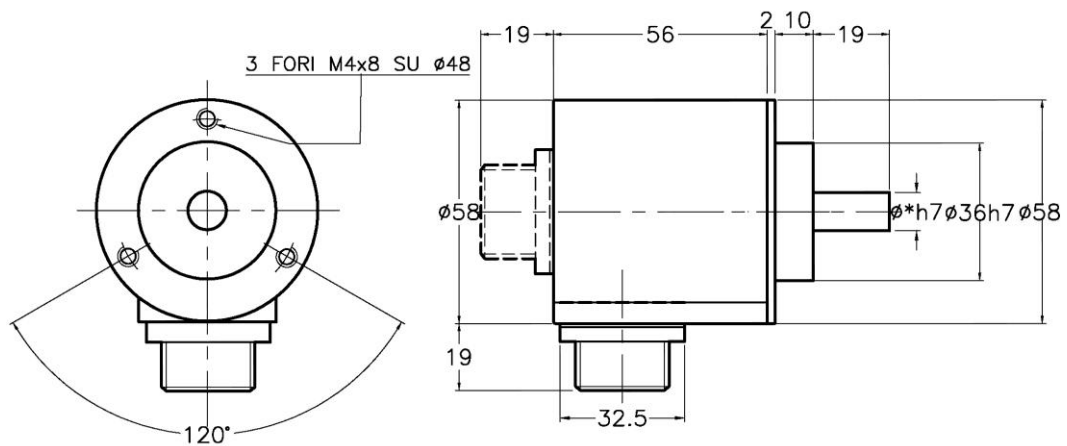
Body Ø 58 mm • Aluminium or ABS housing • Magnetic reading • Zero pulse



RE/REM520 cable output

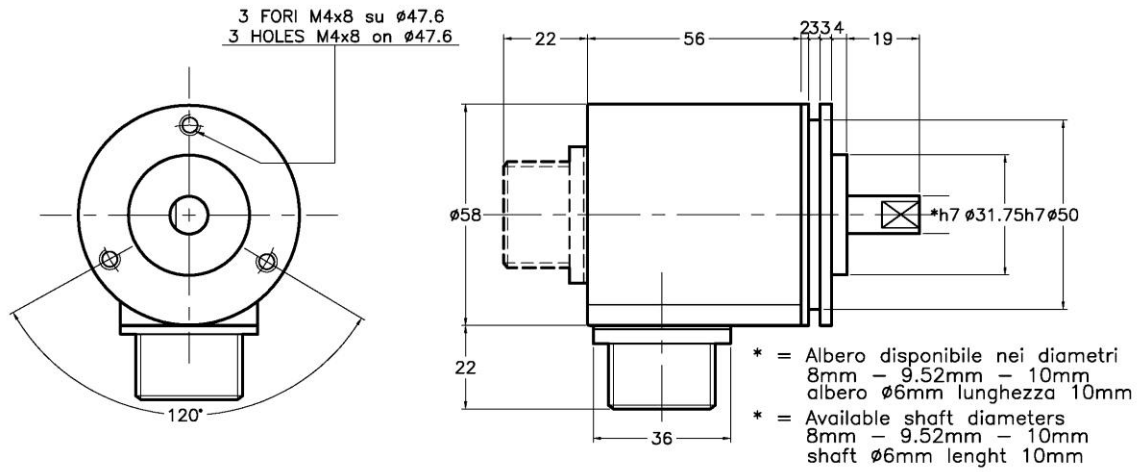


RE/REM540 7-pin connector outlet

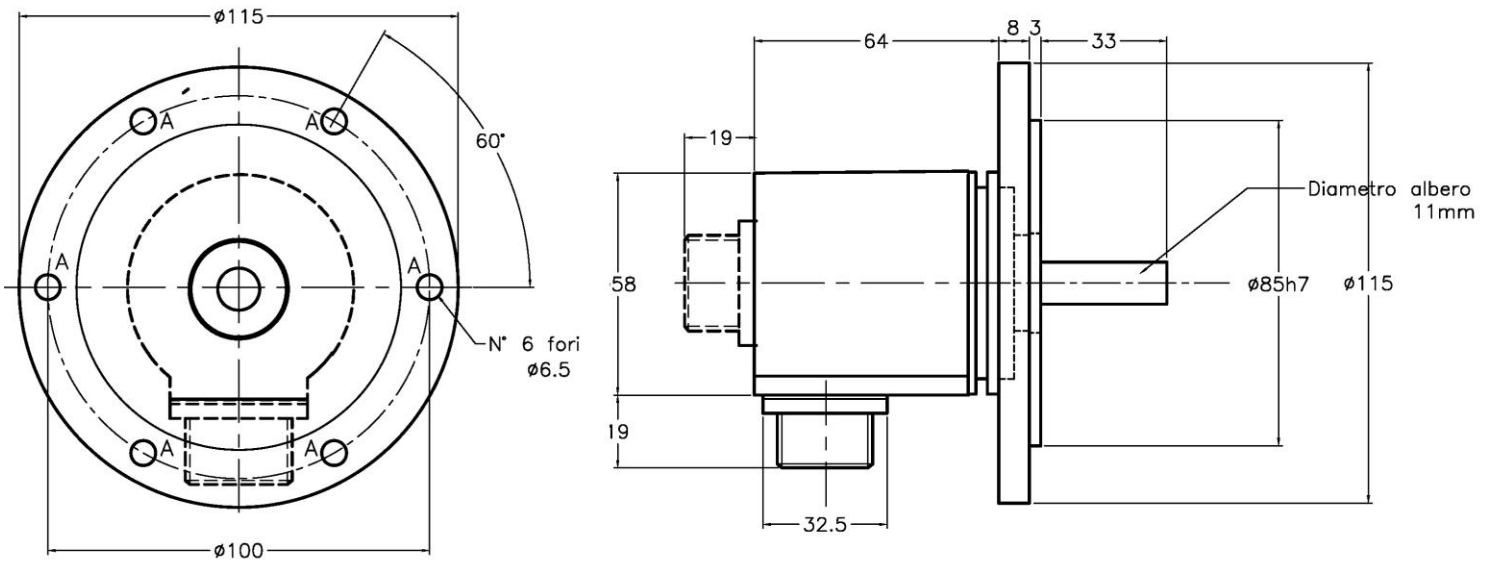


- \* Albero disponibile nei diametri  
8mm - 9.52mm - 10mm  
Albero diametro 6mm lunghezza 10mm
- \* Available shaft diameters  
8mm - 9.52mm - 10mm  
shaft diameter 6mm length 10mm

RE/REM510 10-pin connector outlet



RE/REM530 7-pin connector outlet



Further dimensional drawings available at [www.elap.it](http://www.elap.it)