

# ROTAPULS

Incremental encoders

Series

I58 • I58S



- Standard encoder for general industrial application
- Pulse rates up to 10000 PPR (real)
- Servo or clamp flange mounting
- High operating temperature range (optional)
- Line Driver, HTL and sine/cosine output circuits



I58 • I58S

## ENVIRONMENTAL SPECIFICATIONS

|                              |   |
|------------------------------|---|
| Shock:                       | 100 g, 6 ms   |
| Vibrations:                  | 10 g, 5-2000 Hz   |
| Protection:                  | IP64  |
| Operating temperature range: | -25°C +85°C (-13°F +185°F)  |
| Storage temperature range:   | -25°C +85°C (-13°F +185°F)<br>(98% R.H. without condensation)   |
| Options:                     | <ul style="list-style-type: none"> <li>• Operating temperature range: -40°C +100°C (-40°F +212°F)</li> <li>• IP65 Protection</li> </ul> |

## MECHANICAL SPECIFICATIONS

|                                |  |
|--------------------------------|--|
| Dimensions:                    | see drawing  |
| Shaft diameter:                | Ø 6, 8, 9.52, 10, 12 mm  |
| Shaft loading (axial, radial): | 100 N max.   |
| Shaft rotational speed:        | typ. 6000 rpm / 12000 temporary  |
| Starting torque at 20°C:       | I58: 0,15 Ncm / I58S: 0,4 Ncm (typical)  |
| Bearings life:                 | 400 x 10 <sup>6</sup> rev. min.<br>(10 <sup>9</sup> rev. min. with 20 N shaft loading max.)            |
| Electrical connections:        | M12, M23 plug or cable output 1 m (3.3 ft)   |
| Weight:                        | ~ 200 g (7 oz)   |
| Options:                       | <ul style="list-style-type: none"> <li>• additional cable</li> <li>• DSub 9 pin inline plug</li> </ul> |

## ELECTRICAL SPECIFICATIONS

|   |  |
|---|--|
| Resolution (PPR):<br>(output circuit N, P, Y, L, H) | 2-4-5-8-10-12-15-16-20-24-25-30-35-36-40-50-60-64-70-80-90<br>100-120-127-142-150-160-180-200-216-230-236-240-250-254<br>256-267-270-300-314-360-375-400-410-435-471-500-512-600<br>635-720-750-800-900-1000-1024-1068-1200-1250-1270-1400<br>1440-1500-1800-2000-2048-2250-2400-2500-3000-3600-4000<br>4096-5000-6000-8192-9000-10000 |
| Resolution (PPR):<br>(output circuit V)             | 500-512-1000-1024-1250-2000-2048-2500  |
| Counting frequency:                                 | 100 kHz max.   |
| Output circuits:                                    | NPN, PNP, Push-Pull, Line Driver, Universal circuit, Sine/cosine   |
| Power supply:                                       | +5V±5%, +10V +30V,+5V +30V<br>(sine/cosine only +5V±5%)  |
| Consumption:  | 70 mA (typical)  |
| Output current (each channel):                      | 40 mA max.   |
| Protection:   | against inversion of polarity and short-circuit (except L and V circuit)   |
| EMC:  | electro-magnetic immunity, according to: EN 61000-4-2<br>EN 61000-4-4  |
| Optoelectronic life:                                | 100.000 hrs min.   |
| Option:   | <ul style="list-style-type: none"> <li>• Counting frequency up to 300 kHz</li> <li>• Line Driver 24/5V</li> </ul>  |

## MATERIALS

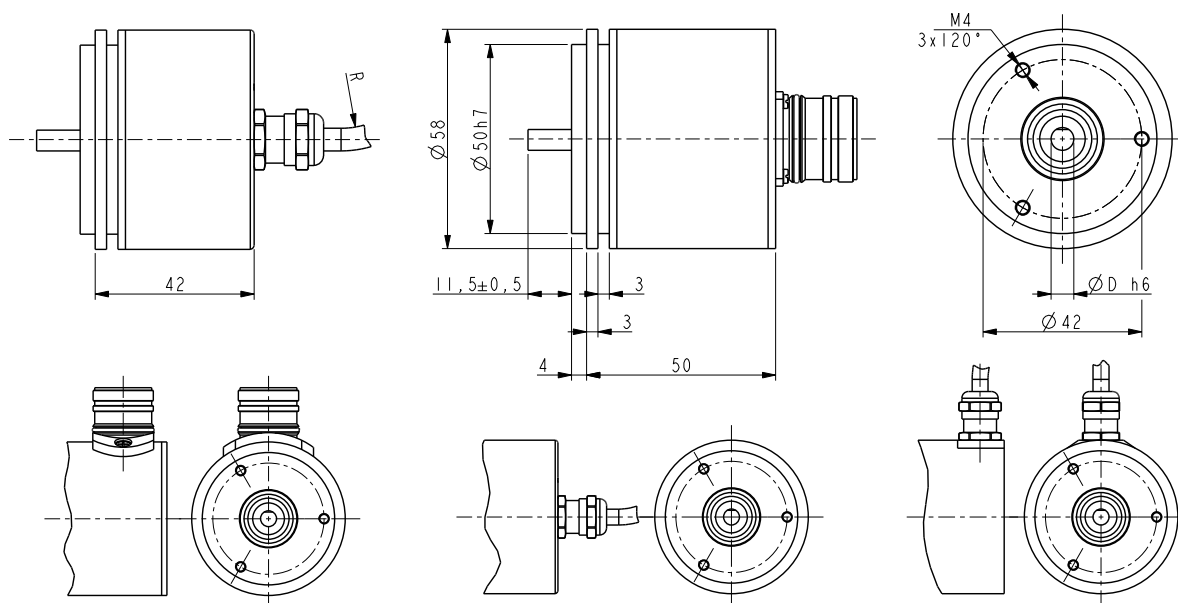
|               |   |
|---------------|---|
| Flange:       | anticorrosive, UNI EN AW-6082               |
| Housing:      | anticorrosive, UNI EN AW-6082               |
| Bearings:     | ABEC 5                                      |
| Shaft:        | stainless steel, non-magnetic - UNI EN 4305 |
| Light source: | GaAl diodes                                 |

## PREFERENTIAL MODELS

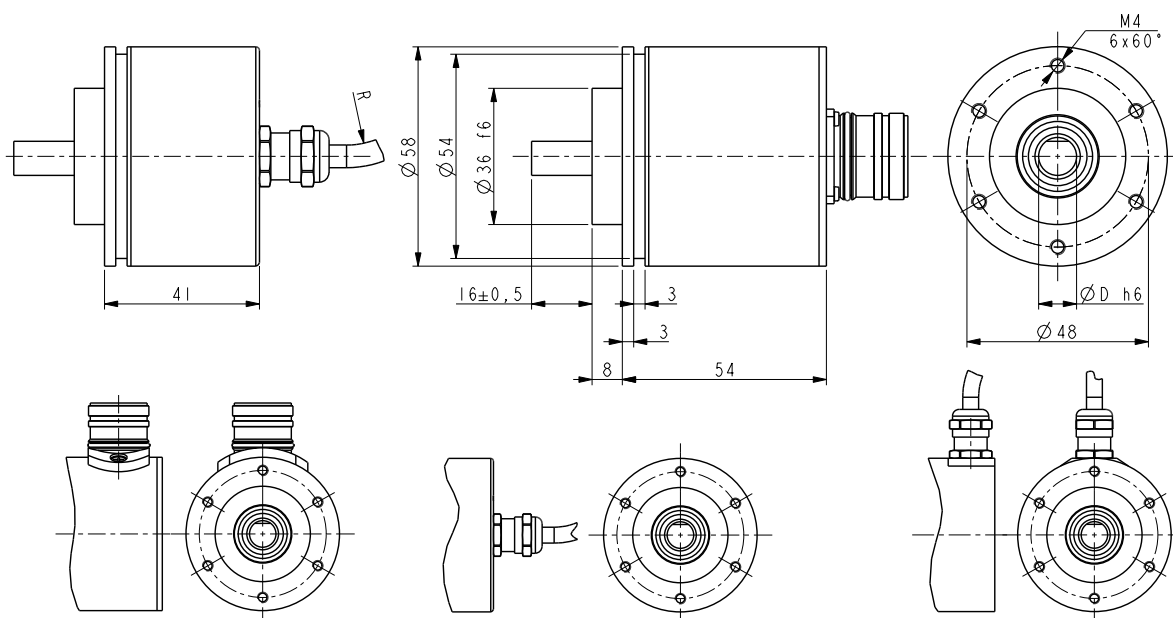
|                    |                    |
|--------------------|--------------------|
| I58-H-500ZCU46RL2  | I58-H-500ZCZ46R    |
| I58-H-1000ZCU46RL2 | I58-H-1000ZCZ46R   |
| I58-H-1024ZCU46RL2 | I58-H-1024ZCZ46R   |
| I58-H-2048ZCU46RL2 | I58-H-2048ZCZ46R   |
| I58-H-2500ZCU46RL2 | I58-H-2500ZCZ46R   |
| I58-H-500ZCZ46     | I58S-H-500ZCZ410R  |
| I58-H-1000ZCZ46    | I58S-H-1000ZCZ410R |
| I58-H-1024ZCZ46    | I58S-H-1024ZCZ410R |
| I58-H-2048ZCZ46    | I58S-H-2048ZCZ410R |
| I58-H-2500ZCZ46    | I58S-H-2500ZCZ410R |

## ACCESSORIES

|                  |                                |
|------------------|--------------------------------|
| EPFL 121:        | 12 pin M23 mating connector    |
| EC-C12F-LK-I8-x: | cordset x meter, M23 connector |
| EDE 9S:          | 9 pin DSub mating connector    |
| PAN/PGF:         | flexible couplings             |
| LKM-386:         | fixing clamps                  |



158



158S

Order code

|      |   |     |   |       |     |     |     |     |     |     |     |     |       |
|------|---|-----|---|-------|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| I58  | - | X   | - | XXXXX | XXX | X   | XX  | X   | X   | X   | X   | XX  | /Sxxx |
| I58S |   | (a) |   | (b)   | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k)   |

(a) OUTPUT CIRCUITS

N = NPN o.c.  
 P = PNP o.c.  
 Y = Push Pull  
 L = Line Driver (RS422)  
 H = PP/LD universal circuit  
 V = 1 Vpp sine/cosine

(b) RESOLUTION (PPR)

See electrical specifications

(c) OUTPUT SIGNALS / CONNECTIONS

BNF = AB, cable output (except V output)  
 ZNF = ABO, cable output (except V output)  
 BCU = AB /AB, cable output  
 ZCU = ABO /ABO, cable output  
 BCZ = AB /AB, M23 12 pin plug  
 ZCZ = ABO /ABO, M23 12 pin plug  
 ZCM = ABO /ABO, M12 8 pin plug

(d) SUPPLY VOLTAGE

1 = +5V±5% (L, V output circuit)  
 2 = +10V÷ +30V (N, P, Y output circuit)  
 4 = +5V÷ +30V (H output circuit)

(e) SHAFT DIAMETER

6 = 6 mm  
 8 = 8 mm  
 P9 = 9.52 mm - 3/8"  
 10 = 10 mm  
 12 = 12 mm

(f) CONNECTION POSITION

- = axial  
 R = radial

(g) PROTECTION

- = IP64 (standard)  
 P = IP65

(h) COUNTING FREQUENCY

- = 100 kHz (standard)  
 W = 300 kHz

(i) OPERATING TEMPERATURE

- = -25°C +85°C (-13°F +185°F) standard  
 K = -40°C +100°C (-40°F +212°F)

(j) CABLE LENGTH

- = cable output 1 m (standard)  
 L2 = cable output 2 m  
 Lx = cable output x m  
 CLx = x m cable with DSub 9 pin inline plug

(k) CUSTOM VERSION