

### High temperature Type ESI 58T



- High temperature version, up to 110 °C (higher temperatures on request). Application e.g. drive technology.
- Many variations, also customized versions
- Temperature and ageing compensation
- Short-circuit proof outputs
- Reverse connection protection (at  $U_B = 10 \dots 30 \text{ V DC}$ )
- Resolution up to 5000 ppr
- High shaft load
- available as explosion proof zone 2 and 22

#### Mechanical characteristics:

|  |  |
|--|--|
| Speed:                                   | max. 12000 min <sup>-1</sup>               |
| Rotor moment of inertia:                 | approx. $1.8 \times 10^{-6} \text{ kgm}^2$ |
| Starting torque:                         | < 0.01 Nm                                  |
| Radial load capacity of shaft*:          | 80 N                                       |
| Axial load capacity of shaft*:           | 40 N                                       |
| Weight:                                  | approx. 0.4 kg                             |
| Protection acc. to EN 60 529:            | IP 65                                      |
| Working temperature:                     | -20 °C ... +105 °C <sup>1)</sup>           |
| Operating temperature:                   | -20 °C ... +110 °C <sup>1)</sup>           |
| Shaft:                                   | stainless steel                            |
| Shock resistance acc. to DIN-IEC 68-2-27 | 1000 m/s <sup>2</sup> , 6 ms               |
| Vibration resistance acc. to IEC 68-2-6: | 100 m/s <sup>2</sup> , 10 ... 2000 Hz      |

#### Pulse rates available at short notice:

10, 20, 25, 30, 50, 60, 100, 120, 125, 127, 150, 180, 200, 216, 240, 250, 254, 256, 300, 314, 360, 375, 400, 500, 512, 600, 625, 720, 745, 750, 762, 800, 900, 927, 1000, 1024, 1250, 1270, 1400, 1500, 1800, 2000, 2048, 2250, 2400, 2500, 3000, 3600, 4000, 4096, 5000

Other pulse rates on request

\* View also diagrams on page 25

<sup>1)</sup> Non-condensing

#### Electrical characteristics:

|  |                             |                            |
|--|-----------------------------|----------------------------|
| Output circuit:                                      | RS 422 (TTL-compatible)     | Push-pull                  |
| Supply voltage:                                      | 5 V (±5%) or 10 ... 30 V DC | 10 ... 30 V DC             |
| Power consumption (no load) without inverted signal: | –                           | typ. 55 mA / max. 125 mA   |
| Power consumption (no load) with inverted signals:   | typ. 40 mA / max. 100 mA    | typ. 80 mA / max. 150      |
| Permissible load/channel:                            | max. ±20 mA                 | max. ±30 mA                |
| Pulse frequency:                                     | max. 300 kHz                | max. 300 kHz               |
| Signal level high:                                   | min. 2.5 V                  | min. $U_B - 2.5 \text{ V}$ |
| Signal level low:                                    | max. 0.5 V                  | max. 2.0 V                 |
| Rise time $t_r$ :                                    | max. 200 ns                 | max. 1 µs                  |
| Fall time $t_f$ :                                    | max. 200 ns                 | max. 1 µs                  |
| Short circuit proof outputs: <sup>1)</sup>           | yes <sup>2)</sup>           | yes                        |
| Reverse connection protection at $U_B$ :             | 5 V: no<br>10 ... 30 V: yes | yes                        |

Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3

<sup>1)</sup> If supply voltage correctly applied

<sup>2)</sup> Only one channel allowed to be shorted-out:

(If  $U_B = 5 \text{ V}$ , short-circuit to channel, 0 V, or + $U_B$  is permitted)

(If  $U_B = 5-30 \text{ V}$ , short-circuit to channel or 0 V is permitted)

### High temperature Type ESI 58T

#### Terminal assignment

| Signal:           | 0V                        | 0V<br>Sensor <sup>2)</sup> | +U <sub>B</sub>           | +U <sub>B</sub><br>Sensor <sup>2)</sup> | A  | $\bar{A}$ | B  | $\bar{B}$ | 0  | $\bar{0}$ | Shield           |
|-------------------|---------------------------|----------------------------|---------------------------|---|----|-----------|----|-----------|----|-----------|------------------|
| 12 pin plug Pin:  | 10                        | 11                         | 12                        | 2                                       | 5  | 6         | 8  | 1         | 3  | 4         | PH <sup>1)</sup> |
| 7 pin plug Pin:   | F                         | –                          | D                         | E                                       | A  | –         | B  | –         | C  | –         | G                |
| 10 pin plug, Pin: | F                         | –                          | D                         | E                                       | A  | G         | B  | H         | C  | I         | J                |
| Cable colour:     | WH<br>0.5 mm <sup>2</sup> | WH                         | BN<br>0.5 mm <sup>2</sup> | BN                                      | GN | YE        | GY | PK        | BU | RD        |                  |

1) PH = Shield is attached to connector housing

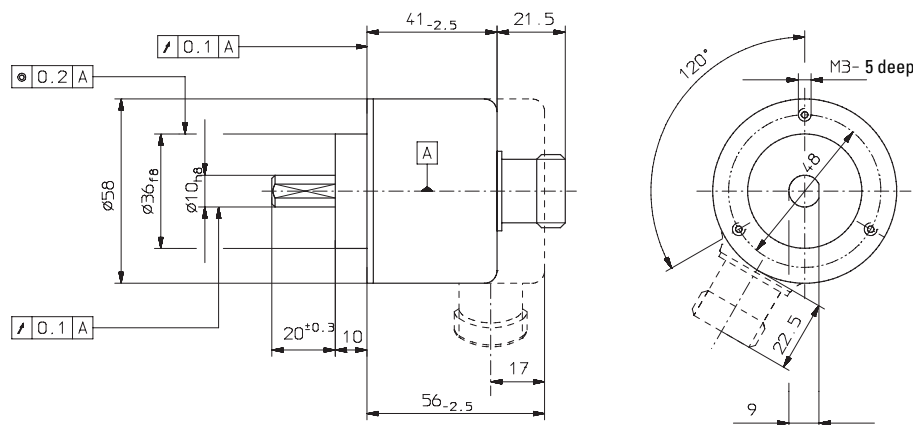
2) Sensor cables are connected to the supply voltage internally if long feeder cables are involved they can be used to adjust or control the voltage at the encoder

- If sensor cables are not in use, they have to be insulated or 0 V<sub>Sensor</sub> has to be connected to 0 V and U<sub>B</sub>Sensor has to be connected to U<sub>B</sub>

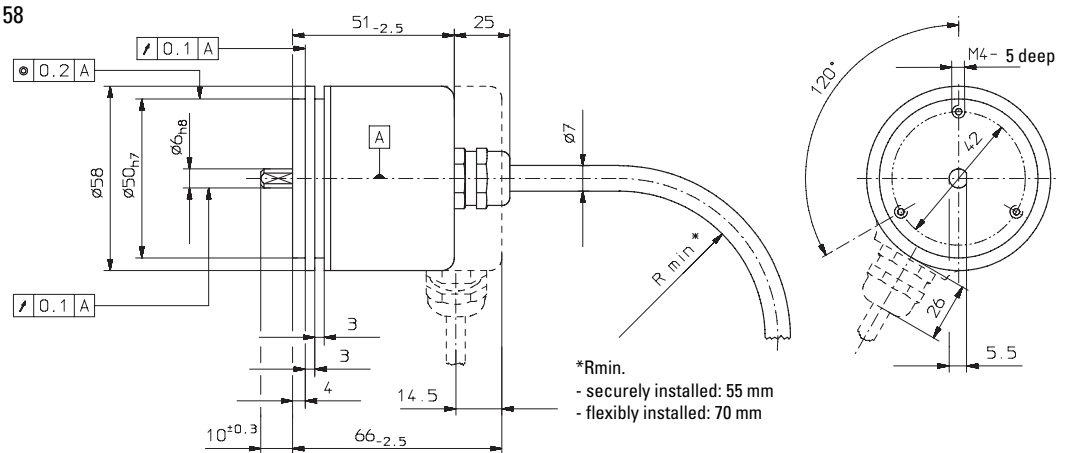
- Using RS 422 outputs and long cable distances, a wave impedance has to be applied at each cable end.  
**Insulate unused outputs before initial startup.**

#### Dimensions

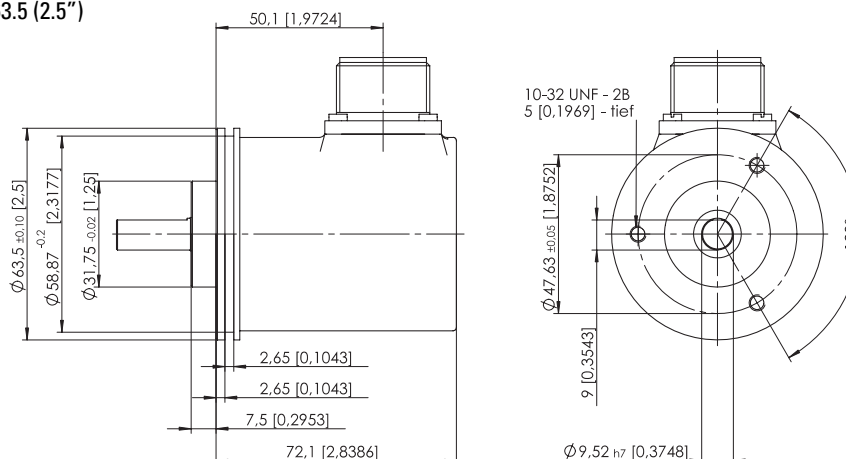
##### Clamping bracket $\varnothing 58$



##### Synchronous bracket $\varnothing 58$



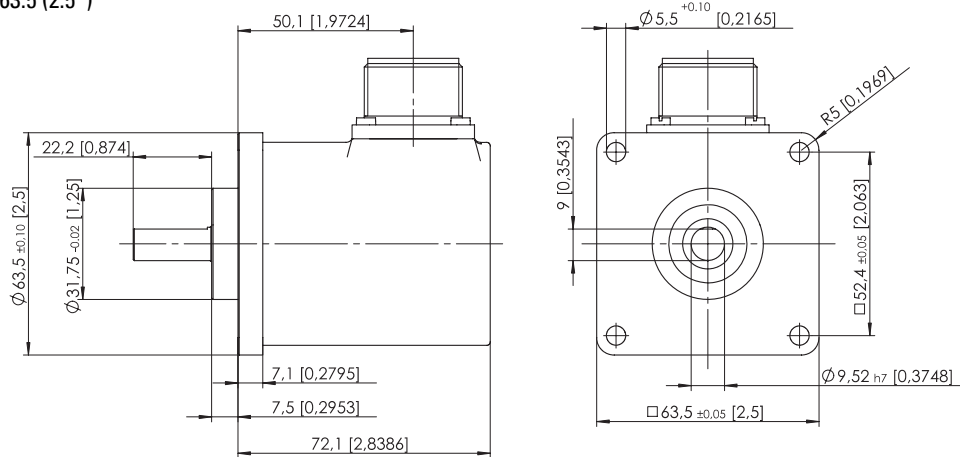
##### Synchronous bracket $\varnothing 63.5$ (2.5")



**Mounting advice:**  
The brackets and shafts of the encoder and drive should not both be rigidly coupled together at the same time! We recommend the use of suitable couplings (see Accessories section)

### High temperature Type ESI 58T

Rectangular bracket □ 63.5 (2.5")

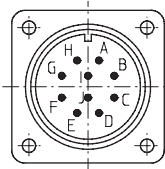
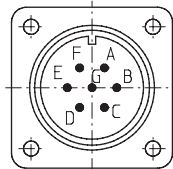
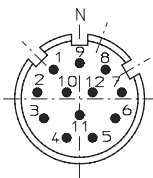


Top view of mating side, male contact base:

12 pin plug

7 pin plug

10 pin plug



Order code:

ESI 58T.XXXX.XXXX

