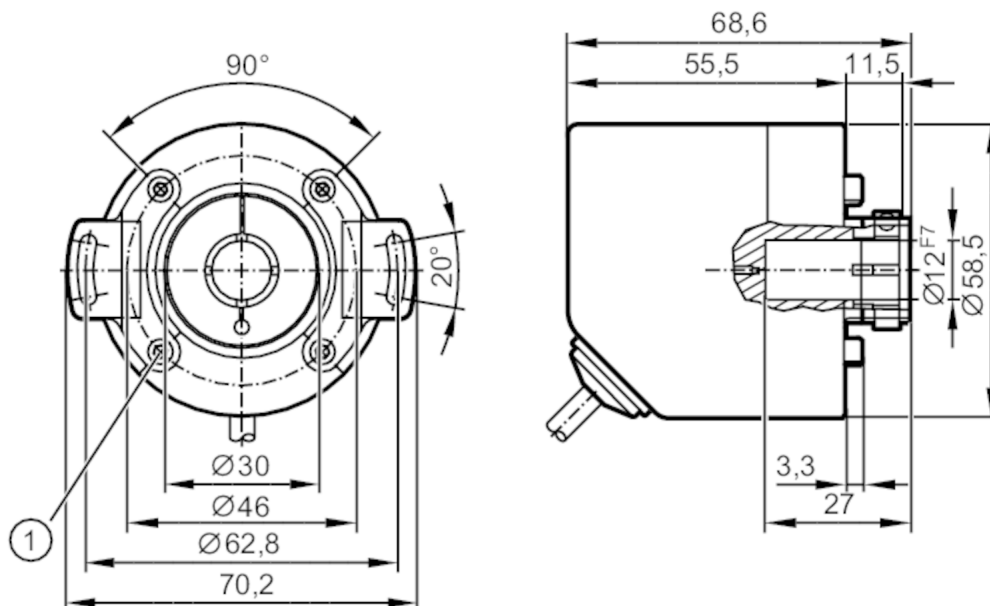


# RO3501



## Hollow shaft encoder open to one side

INCREMENTAL ENCODER BASIC LINE



1 M3



### Application

|                    |             |
|--------------------|-------------|
| Function principle | incremental |
| Detection system   | magnetic    |

### Electrical data

|                                    |              |
|------------------------------------|--------------|
| Operating voltage [V]              | 4.75...30 DC |
| Current consumption [mA]           | < 150        |
| Protection class                   | III          |
| Reverse polarity protection        | yes          |
| Power-on delay time [s]            | 0.5          |
| Max. revolution electrical [U/min] | 12000        |

### Outputs

|                              |                              |
|------------------------------|------------------------------|
| Electrical design            | HTL/TTL                      |
| Switching frequency [kHz]    | 1000                         |
| Factory setting              | Output function: HTL (50 mA) |
| Short-circuit protection     | yes                          |
| Phase difference A und B [°] | 90                           |

### Measuring/setting range

|            |                                                                |
|------------|----------------------------------------------------------------|
| Resolution | 1...10000; (parameterisable; Factory setting: 1024) resolution |
|------------|----------------------------------------------------------------|

### Accuracy / deviations

|              |     |
|--------------|-----|
| Accuracy [°] | 0.1 |
|--------------|-----|

### Software / programming

|                           |                                             |
|---------------------------|---------------------------------------------|
| Parameter setting options | Resolution; direction of rotation; HTL; TTL |
|---------------------------|---------------------------------------------|



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| Interfaces              |      |         |
|-------------------------|------|---------|
| Communication interface |      | IO-Link |
| Transmission type       |      | COM 2   |
| IO-Link revision        |      | 1.1     |
| SIO mode                |      | yes     |
| Min. process cycle time | [ms] | 2.3     |

| Operating conditions        |      |                                                            |
|-----------------------------|------|------------------------------------------------------------|
| Ambient temperature         | [°C] | -40...80                                                   |
| Note on ambient temperature |      | for flexibly laid cable: -25 °C                            |
| Storage temperature         | [°C] | -40...80                                                   |
| Max. relative air humidity  | [%]  | 95; (condensation not permissible)                         |
| Protection                  |      | IP 65; IP 66; (on the housing: IP 67; on the shaft: IP 65) |

| Tests / approvals    |         |       |
|----------------------|---------|-------|
| Shock resistance     |         | 100 g |
| Vibration resistance |         | 20 g  |
| MTTF                 | [years] | 292   |

| Mechanical data               |         |                                                                            |
|-------------------------------|---------|----------------------------------------------------------------------------|
| Weight                        | [g]     | 492.4                                                                      |
| Dimensions                    | [mm]    | Ø 58.5 / L = 68.6                                                          |
| Materials                     |         | flange: aluminium; housing: stainless steel (1.4521 / 444); cable plug: PA |
| Tightening torque             | [Nm]    | < 0.7; (Mounting screw)                                                    |
| Max. revolution, mechanical   | [U/min] | 12000                                                                      |
| Max. starting torque          | [Nm]    | 2                                                                          |
| Reference temperature torque  | [°C]    | 20                                                                         |
| Shaft design                  |         | hollow shaft open to one side                                              |
| Shaft diameter                | [mm]    | 12                                                                         |
| Shaft material                |         | stainless steel                                                            |
| Installation depth of shaft   | [mm]    | 27                                                                         |
| Max. axial shaft misalignment | [mm]    | 0,5                                                                        |

| Electrical connection                                                                             |  |  |
|---------------------------------------------------------------------------------------------------|--|--|
| Cable: 2 m, Ø 4.9 mm; Maximum cable length: 100 m; radial, can also be used axially; 5 x 0.14 mm² |  |  |

| IO-Link |                |  |
|---------|----------------|--|
| brown   | L+             |  |
| white   | not to be used |  |
| blue    | L-             |  |
| grey    | not to be used |  |
| black   | IO-Link        |  |
| Screen  | housing        |  |



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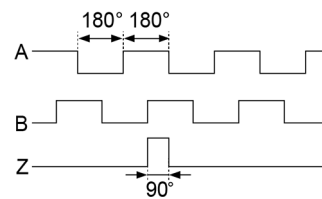
INCREMENTAL ENCODER BASIC LINE

### encoder

|        |                    |
|--------|--------------------|
| brown  | UB                 |
| white  | A                  |
| blue   | GND                |
| grey   | B                  |
| black  | Z/0-Pulse (90 deg) |
| Screen | housing            |

### Diagrams and graphs

#### Pulse diagram



direction of rotation clockwise (looking at the shaft)