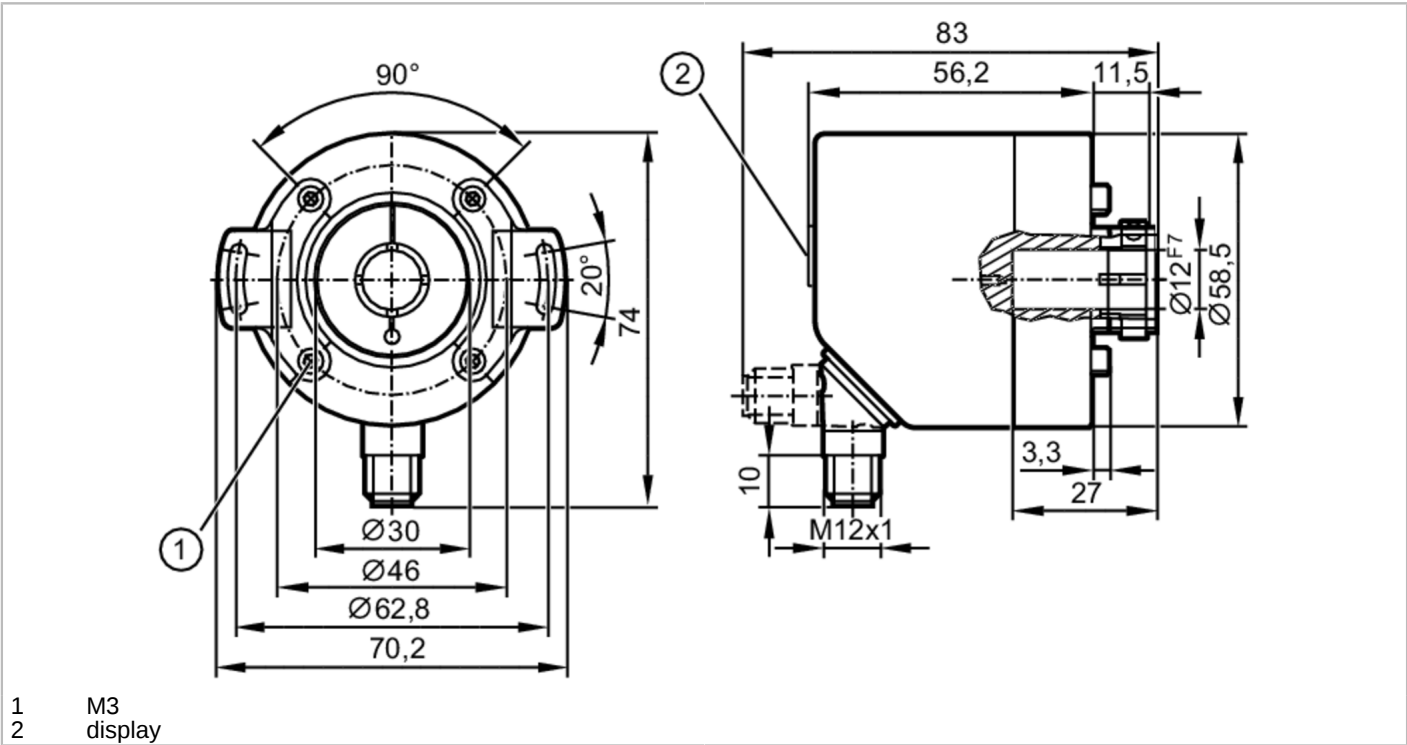


# ROP521



## Incremental encoder with hollow shaft and display

INCREMENTAL ENCODER PERFORMANCE LINE



- 1 M3  
2 display



| Product characteristics            |                                                                |
|------------------------------------|----------------------------------------------------------------|
| Resolution                         | 1...10000; (parameterisable; Factory setting: 1024) resolution |
| Communication interface            | IO-Link                                                        |
| Shaft design                       | hollow shaft open to one side                                  |
| Shaft diameter [mm]                | 12                                                             |
| Application                        |                                                                |
| Function principle                 | incremental                                                    |
| Detection system                   | magnetic                                                       |
| Application                        | encoder; Speed monitor; counter                                |
| Electrical data                    |                                                                |
| Operating voltage [V]              | 4.75...30 DC                                                   |
| Current consumption [mA]           | < 350                                                          |
| Protection class                   | III                                                            |
| Reverse polarity protection        | yes                                                            |
| 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 and B [°]       | 90                                                             |
| Measuring/setting range            |                                                                |
| Resolution                         | 1...10000; (parameterisable; Factory setting: 1024) resolution |



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|                                     |                                                                                 |                                                       |
|-------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------|
| Speed monitor                       |                                                                                 |                                                       |
| Set point SP                        | -9994...9999 U/min                                                              | -166.6...166.7 Hz                                     |
| Reset point rP                      | -9999...9994 U/min                                                              | -166.7...166.6 Hz                                     |
| Counter                             |                                                                                 |                                                       |
| Preset point                        | 1...9999                                                                        |                                                       |
| Accuracy / deviations               |                                                                                 |                                                       |
| Accuracy                            | [°]                                                                             | 0.1                                                   |
| Software / programming              |                                                                                 |                                                       |
| Parameter setting options           | encoder; Resolution; direction of rotation; HTL; TTL; Speed monitor; Resolution |                                                       |
| Interfaces                          |                                                                                 |                                                       |
| Communication interface             | IO-Link                                                                         |                                                       |
| Transmission type                   | COM2 (38,4 kBaud)                                                               |                                                       |
| IO-Link revision                    | 1.1                                                                             |                                                       |
| SIO mode                            | yes                                                                             |                                                       |
| Min. process cycle time             | [ms]                                                                            | 2.3                                                   |
| Operating conditions                |                                                                                 |                                                       |
| Ambient temperature                 | [°C]                                                                            | -40...85                                              |
| Storage temperature                 | [°C]                                                                            | -40...85                                              |
| Max. relative air humidity          | [%]                                                                             | 95; (condensation not permissible)                    |
| Protection                          | IP 65; (on the housing: IP 67; on the shaft: IP 65)                             |                                                       |
| Tests / approvals                   |                                                                                 |                                                       |
| Shock resistance                    |                                                                                 | 100 g                                                 |
| Vibration resistance                |                                                                                 | 20 g                                                  |
| MTTF                                | [years]                                                                         | 218                                                   |
| Mechanical data                     |                                                                                 |                                                       |
| Weight                              | [g]                                                                             | 481.5                                                 |
| Dimensions                          | [mm]                                                                            | Ø 58 / L = 56.2                                       |
| Materials                           | flange: aluminium; housing: stainless steel (1.4521 / 444); display window: PEI |                                                       |
| 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                                                   |
| Fixing flange                       | Ø 58 mm                                                                         |                                                       |
| Displays / operating elements       |                                                                                 |                                                       |
| Display                             |                                                                                 | 10-segment display, red/green 4-digit parameterisable |
|                                     |                                                                                 | 2 x LED, yellow                                       |
|                                     |                                                                                 | 5 x LED, green                                        |



## Incremental encoder with hollow shaft and display

INCREMENTAL ENCODER PERFORMANCE LINE

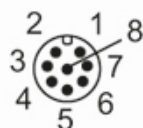
### Accessories

Items supplied

Stator coupling: 2

### Electrical connection

Connector: 1 x M12, radial, can also be used axially; coding: A; Moulded body: stainless steel (316 / 1.4401); Maximum cable length: 100 m; (IO-Link: max. 20 m)



### IO-Link

|        |                |
|--------|----------------|
| 1      | L+             |
| 2      | not to be used |
| 3      | L-             |
| 4      | IO-Link        |
| 5      | not to be used |
| 6      | not to be used |
| 7      | not to be used |
| 8      | not to be used |
| Screen | plug           |

### encoder

|        |                    |
|--------|--------------------|
| 1      | UB                 |
| 2      | A                  |
| 3      | GND                |
| 4      | Z/0-Pulse (90 deg) |
| 5      | B                  |
| 6      | A-                 |
| 7      | B-                 |
| 8      | Z-                 |
| Screen | plug               |

### Preset counter

|        |                |
|--------|----------------|
| 1      | UB             |
| 2      | IN1            |
| 3      | GND            |
| 4      | not to be used |
| 5      | OUT1           |
| 6      | not to be used |
| 7      | not to be used |
| 8      | not to be used |
| Screen | plug           |

### Speed monitor

|        |                |
|--------|----------------|
| 1      | UB             |
| 2      | OUT2           |
| 3      | GND            |
| 4      | not to be used |
| 5      | OUT1           |
| 6      | OUT2-          |
| 7      | OUT1-          |
| 8      | not to be used |
| Screen | plug           |

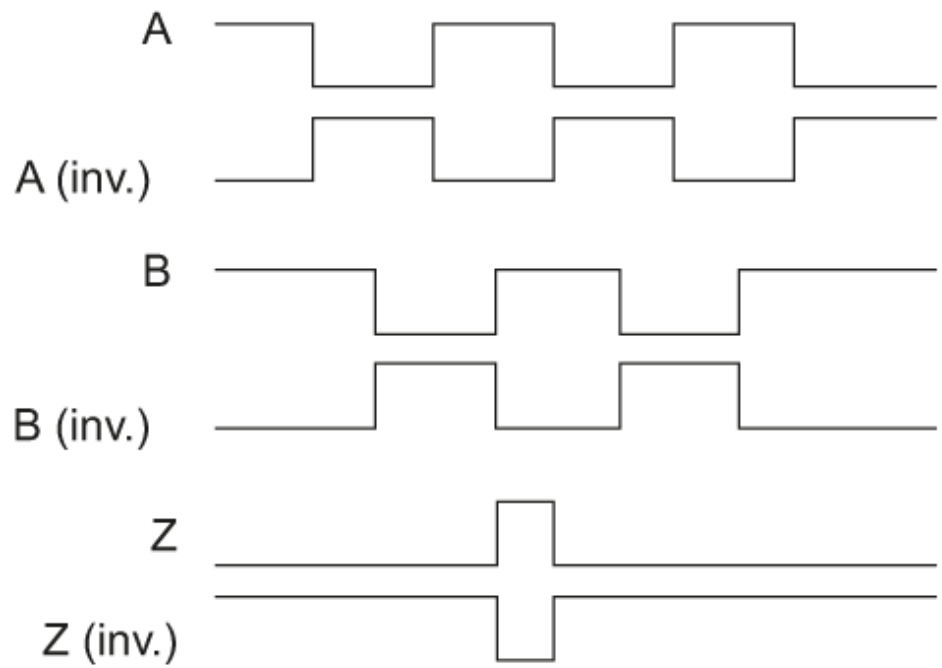


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INCREMENTAL ENCODER PERFORMANCE LINE

### Diagrams and graphs

Pulse diagram



direction of rotation clockwise (looking at the shaft)