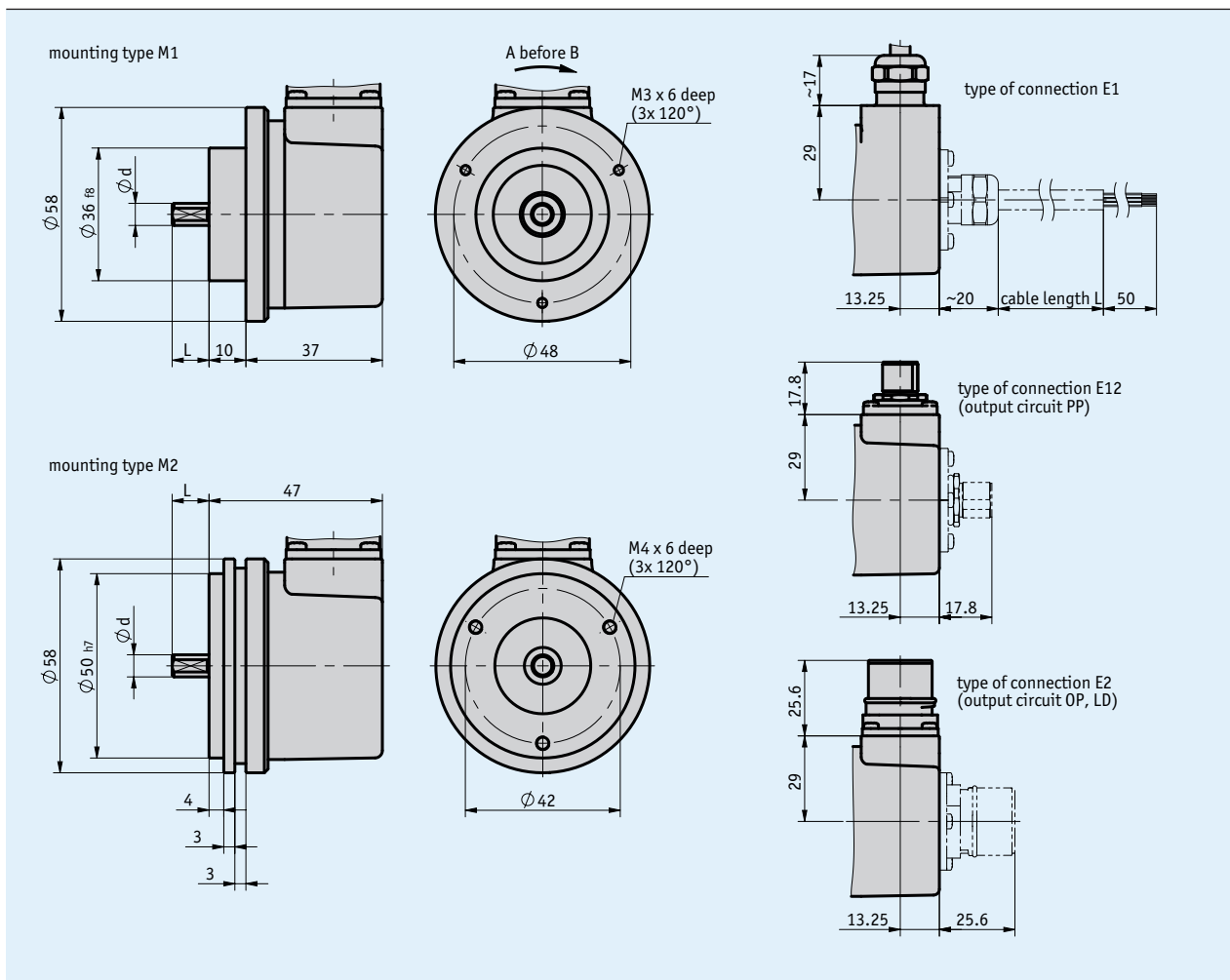


# Incremental encoder IV5800

Robust optical standard rotary encoder, solid shaft

## Profile

- Resolution max. 5000 pulses/revolution
- IP65 or IP66/IP67 type of protection
- Robust bearing construction
- -40 °C ... +85 °C operating temperature
- High shock and vibration resistance



## Mechanical data

| Feature              | Technical data                           | Additional information         |
|----------------------|--|--------------------------------|
| Shaft                | stainless steel                          |                                |
| Housing              | die-cast                                 |                                |
| Speed                | ≤12000 rpm                               | IP65                           |
|                      | ≤6000 rpm                                | IP65 continuous operation      |
|                      | ≤6000 rpm                                | IP66/IP67                      |
|                      | ≤3000 rpm                                | IP66/IP67 continuous operation |
| Moment of inertia    | ~1.8 x 10 <sup>-6</sup> kgm <sup>2</sup> |                                |
| Starting torque      | <0.01 Nm at 20 °C                        | IP65                           |
|                      | <0.05 Nm at 20 °C                        | IP66/IP67                      |
| Shaft load rating    | 100 N                                    | radial                         |
|                      | 50 N                                     | axial                          |
| Cable sheath         | PVC                                      | ~ø6.7 mm                       |
| Cable bending radius | 75 mm                                    | static                         |
|                      | 110 mm                                   | dynamic                        |
| Weight               | ~0.4 kg                                  |                                |

### Table of dimensions

| Measure ød [mm]  | Measure L [mm] |
|------------------|----------------|
| ø <sub>h7</sub>  | 10             |
| ø <sub>h7</sub>  | 15             |
| 10 <sub>h7</sub> | 20             |

## Electrical data

### PP output circuit

| Feature                  | Technical data   | Additional information     |
|--------------------------|------------------|----------------------------|
| Operating voltage        | 10 ... 30 V DC   | reverse-polarity protected |
| Current consumption      | typical 50 mA    | ≤100 mA (no load)          |
| Output signal level high | ≥UB - 1.0 V      | short-circuit proof        |
| Output signal level low  | ≤0.5 V           | short-circuit proof        |
| Pulse frequency          | ≤300 kHz         |                            |
| Load                     | ±20 mA           | max. adm.                  |
| Type of connection       | 1x M12 connector | 5-pole, 1x pin             |

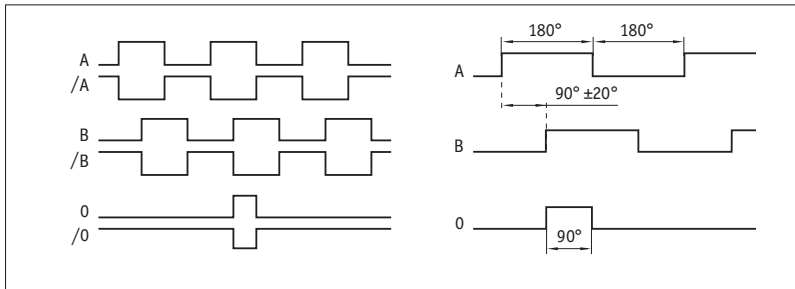
### OP output circuit

| Feature                  | Technical data   | Additional information     |
|--------------------------|------------------|----------------------------|
| Operating voltage        | 10 ... 30 V DC   | reverse polarity protected |
| Current consumption      | typical 50 mA    | ≤100 mA (no load)          |
| Output signal level high | ≥UB - 1.0 V      | short-circuit proof        |
| Output signal level low  | ≤0.5 V           | short-circuit proof        |
| Pulse frequency          | ≤300 kHz         |                            |
| Load                     | ±20 mA           | max. adm.                  |
| Type of connection       | open cable end   |                            |
|                          | 1x M23 connector | 12-pole, 1x pin            |

### LD output circuit

| Feature                  | Technical data   | Additional information              |
|--------------------------|------------------|-------------------------------------|
| Operating voltage        | 5 ... 30 V DC    | reverse-polarity protected          |
| Current consumption      | typical 40 mA    | ≤90 mA (no load)                    |
| Output signal level high | ≥2.5 V           | short-circuit proof, not against UB |
| Output signal level low  | ≤0.5 V           | short-circuit proof, not against UB |
| Pulse frequency          | ≤300 kHz         |                                     |
| Load                     | ±20 mA           | max. adm.                           |
| Type of connection       | open cable end   |                                     |
|                          | 1x M23 connector | 12-pole, 1x pin                     |

## ■ signal pattern



## Ambient conditions

| Feature              | Technical data                        | Additional information           |
|----------------------|---------------------------------------|----------------------------------|
| Ambient temperature  | -40 ... 85 °C                         | plug                             |
|                      | -30 ... 85 °C                         | static laying of cables          |
|                      | -20 ... 85 °C                         | dynamic laying of cables         |
| EMC                  | EN 61326-1                            | immunity requirement of industry |
| Protection category  | IP65, IP66/IP67                       | EN 60529                         |
| Shock resistance     | 3000 m/s <sup>2</sup> , 6 ms          | EN 60068-2-27                    |
| Vibration resistance | 300 m/s <sup>2</sup> , 10 ... 2000 Hz | EN 60068-2-6                     |

## Pin assignment

### ■ LD, PP, OP output circuits

| Signal OP, LD     | Signal PP         | Kabelfarbe E1 |
|-------------------|-------------------|---------------|
| /B                | nc                | pink          |
| +SUB (sense line) | +SUB (sense line) | red-blue      |
| 0                 | 0                 | blue          |
| /0                | nc                | red           |
| A                 | A                 | green         |
| /A                | nc                | yellow        |
| B                 | B                 | gray          |
| GND               | GND               | white         |
| SGND (sense line) | SGND (sense line) | gray-pink     |
| +UB               | +UB               | brown         |

### ■ PP output circuit

| Signal | PIN E12 |
|--------|---------|
| GND    | 1       |
| +UB    | 2       |
| A      | 3       |
| B      | 4       |
| 0      | 5       |

### ■ LD, OP output circuits

| Signal            | PIN E2 |
|-------------------|--------|
| /B                | 1      |
| +SUB (Sense line) | 2      |
| 0                 | 3      |
| /0                | 4      |
| A                 | 5      |
| /A                | 6      |
| nc                | 7      |
| B                 | 8      |
| nc                | 9      |
| GND               | 10     |
| SGND (Sense line) | 11     |
| +UB               | 12     |

## Order

### Ordering table

| Feature                           | Ordering data   | Specification   | Additional information |
|-----------------------------------|-----------------|---|------------------------|
| Pulses/revolution                 | ...<br><b>A</b> | 50, 64, 100, 200, 250, 256, 300, 360, 400, 500, 512, 800, 1000, 1024, 1200, 2000, 2048, 2500, 3600, 4000, 600, 4096, 5000 |                        |
| Type of connection                | <b>E1</b>       | open cable end  | only with OP, LD       |
|                                   | <b>E2</b>       | plug M23  | only with OP, LD       |
|                                   | <b>E12</b>      | plug M12  | only with PP           |
| Position of electrical connection | <b>A</b>        | axial   |                        |
|                                   | <b>R</b>        | radial  |                        |
| Cable length                      | ...<br><b>D</b> | 01.0, 02.0, 03.0, 04.0, 05.0, 06.0, 08.0, 10.0, 15.0, 20.0 in m   | only with E1           |
|                                   | <b>OK</b>       |   | only with E2 and E12   |
| Mounting type                     | <b>M1</b>       | clamping flange   |                        |
|                                   | <b>M2</b>       | servo flange  |                        |
| Output circuit                    | <b>PP</b>       | push-pull   |                        |
|                                   | <b>OP</b>       | push-pull with inversion  |                        |
|                                   | <b>LD</b>       | LineDriver  |                        |
| Shaft diameter                    | <b>6x10</b>     | ø6 mm, length 10 mm   |                        |
|                                   | <b>8x15</b>     | ø8 mm, length 15 mm   |                        |
|                                   | <b>10x20</b>    | ø10 mm, length 20 mm  |                        |
| Protection category               | <b>IP65</b>     | IP65  |                        |
|                                   | <b>IP66/67</b>  | IP66/IP67   |                        |

### Order key



**Scope of delivery:** IV5800, Quick Start Guide

#### Accessories:

|   |  |
|---|--|
| Electronic display MA10/4                         | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Electronic display MA48                           | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Electronic display MA55                           | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Wire-actuated encoder SG31                        | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Wire-actuated encoder SG60                        | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Wire-actuated encoder SG120                       | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Wire-actuated encoder SG150                       | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Cable extension KV05S0, with PP                   | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Cable extension KV12S1, with OP and LD            | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Mating Connector Overview                         | <a href="http://www.siko-global.com">www.siko-global.com</a> |
| Mating connector, with PP, 5-pole, socket         | Order key 84109  |
| Mating connector, with OP and LD, 12-pole, socket | Order key 81935  |