

# Encoder-Pinbelegung

## Resolver-Feedback

Encoder-Typ: Resolver 2p 7V 10KHz

| RESOLVER CONNECTION |            |           |               |
|---------------------|------------|-----------|---------------|
| Function            | M15 –12+3p | M17 – 17p | M23 – 12p 20° |
| Ref+                | 10         | 10        | 10            |
| Ref-                | 7          | 7         | 7             |
| Cos+                | 2          | 2         | 2             |
| Cos-                | 1          | 1         | 1             |
| Sen+                | 11         | 11        | 11            |
| Sen-                | 12         | 12        | 12            |
| PTC / PT1000+       | 8          | 8         | 8             |
| PTC / PT1000-       | 9          | 9         | 9             |

## TTL-Encoder

| TTL ENCODER CONNECTION |                                   |           |           |
|------------------------|-----------------------------------|-----------|-----------|
| Function               | M15 –12+3p – SIZE 0 <sup>1)</sup> | M17 – 17p | M23 – 17p |
| +5VDC                  | B                                 | 10        | 10        |
| GND                    | A                                 | 7         | 7         |
| A+                     | 11                                | 1         | 1         |
| A/                     | 12                                | 2         | 2         |
| B+                     | 1                                 | 11        | 11        |
| B/                     | 2                                 | 12        | 12        |
| Z+                     | 3                                 | 3         | 3         |
| Z/                     | 10                                | 13        | 13        |
| U+                     | 4                                 | 4         | 4         |
| U/                     | -                                 | 14        | 14        |
| V+                     | 6                                 | 5         | 5         |
| V/                     | -                                 | 6         | 6         |
| W+                     | 5                                 | 16        | 16        |
| W/                     | -                                 | 15        | 15        |
| PTC / PT1000+          | 8                                 | 8         | 8         |
| PTC / PT1000-          | 9                                 | 9         | 9         |

## BISS-C-Encoder

Encoder-Typen:

ELM35 :

<https://www.sick.com/at/de/catalog/produkte/motion-control-sensoren/motor-feedback-systeme/elsel-m35/c/g584054>

| <i>BISS-C ENCODER CONNECTION ( additional BISS-B analogic signals in brackets)</i> |                    |                  |                  |
|------------------------------------------------------------------------------------|--------------------|------------------|------------------|
| <i>Function</i>                                                                    | <i>M15 – 12+3p</i> | <i>M17 – 17p</i> | <i>M23 – 17p</i> |
| +5V <sub>Dc</sub>                                                                  | 10                 | 10               | 10               |
| GND                                                                                | 7                  | 7                | 7                |
| (A+)                                                                               | 1                  | 1                | 1                |
| (A-)                                                                               | 2                  | 2                | 2                |
| DATA+                                                                              | 3                  | 3                | 3                |
| CLOCK+                                                                             | 5                  | 5                | 5                |
| (B+)                                                                               | 11                 | 11               | 11               |
| (B-)                                                                               | 12                 | 12               | 12               |
| DATA-                                                                              | 4                  | 13               | 13               |
| CLOCK-                                                                             | A                  | 14               | 14               |
| GND BAT (0V SENSE)                                                                 | B                  | 15               | 15               |
| +VBAT (5V SENSE)                                                                   | C                  | 16               | 16               |
| PTC / PT1000+                                                                      | 8                  | 8                | 8                |
| PTC / PT1000-                                                                      | 9                  | 9                | 9                |

## Endat-Encoder

Encoder-Typen:

EQI1131 Endat 2.2: <https://www.heidenhain.com/service-support/infobase/1164811-05>

EQI1130 Endat 2.1: <https://www.heidenhain.com/service-support/infobase/1164813-04>

| <i>ENDAT ENCODER CONNECTION 2.2 (2.1)</i> |                    |                  |                  |
|-------------------------------------------|--------------------|------------------|------------------|
| <i>Function</i>                           | <i>M15 – 12+3p</i> | <i>M17 – 17p</i> | <i>M23 – 17p</i> |
| +5V <sub>Dc</sub>                         | 10                 | 10               | 10               |
| GND                                       | 7                  | 7                | 7                |
| (A+)                                      | 1                  | 1                | 1                |
| (A-)                                      | 2                  | 2                | 2                |
| DATA+                                     | 3                  | 3                | 3                |
| CLOCK+                                    | 5                  | 5                | 5                |
| (B+)                                      | 11                 | 11               | 11               |
| (B-)                                      | 12                 | 12               | 12               |
| DATA-                                     | 4                  | 13               | 13               |
| CLOCK-                                    | A                  | 14               | 14               |
| 0V SENSE                                  | B                  | 15               | 15               |
| +5V SENSE                                 | C                  | 16               | 16               |
| (PTC / PT1000+)*                          | 8                  | 8                | 8                |
| (PTC / PT1000-)*                          | 9                  | 9                | 9                |

\*Thermal sensor pins are inserted into the connector only with Endat 2.1, with Endat 2.2 sensor must be read from encoder DATA

## SIN/COS-1Vpp-Encoder

| <i>SIN/COS 1V<sub>pp</sub> ENCODER CONNECTION</i> |  |                  |
|---------------------------------------------------|--|------------------|
| <i>Function</i>                                   |  | <i>M23 – 17p</i> |
| +5V <sub>Dc</sub>                                 |  | 10               |
| GND                                               |  | 7                |
| A+                                                |  | 1                |
| A-                                                |  | 2                |
| R+                                                |  | 3                |
| D-                                                |  | 4                |
| C+                                                |  | 5                |
| C-                                                |  | 6                |
| B+                                                |  | 11               |
| B-                                                |  | 12               |
| R-                                                |  | 13               |
| D+                                                |  | 14               |
| OV SENSE                                          |  | 15               |
| 5V SENSE                                          |  | 16               |
| PTC / PT1000+                                     |  | 8                |
| PTC / PT1000-                                     |  | 9                |

## Hiperface-Encoder

Encoder-Typen:

SEL37 :

<https://www.sick.com/at/de/catalog/produkte/motion-control-sensoren/motor-feedback-systeme/seksel/c/g575659>

SKM36:

<https://www.sick.com/at/de/catalog/produkte/motion-control-sensoren/motor-feedback-systeme/skssk/m36/c/g215684>

SEM70:

<https://www.sick.com/at/de/catalog/produkte/motion-control-sensoren/motor-feedback-systeme/sessem/sem70-hn025ak22/p/p512349?tab=detail>

| <i>HIPERFACE CONNECTION</i> |                  |                  |                  |
|-----------------------------|------------------|------------------|------------------|
| <i>Function</i>             | <i>M15 – 12p</i> | <i>M17 – 17p</i> | <i>M23 – 17p</i> |
| US                          | 10               | 10               | 10               |
| + SIN                       | 8                | 1                | 1                |
| - SIN                       | 4                | 2                | 2                |
| + COS                       | 9                | 11               | 11               |
| - COS                       | 5                | 12               | 12               |
| GND                         | 11               | 7                | 7                |
| + DATA                      | 6                | 3                | 3                |
| - DATA                      | 7                | 13               | 13               |
| PTC / PT1000+               | 1                | 8                | 8                |
| PTC / PT1000-               | 2                | 9                | 9                |

## DSL-Encoder

Encoder-Typen:

EKM36 :

<https://www.sick.com/ag/de/catalog/produkte/safety/sichere-motor-feedback-systeme/eksekm36-s/ekm36-2kf0b020a/p/p478044>

EKS36:

<https://www.sick.com/ag/de/catalog/produkte/motion-control-sensoren/motor-feedback-systeme/eksekms36/eks36-0kf0b018a/p/p477845>

| DSL ENCODER CONNECTION |                                                                                   |                                                                                     |
|------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Function               | M15 – 4+5p                                                                        | M23 – 4+5p                                                                          |
| U phase motor          | A                                                                                 | A                                                                                   |
| V phase motor          | C                                                                                 | B                                                                                   |
| W phase motor          | B                                                                                 | C                                                                                   |
| +24VDC Brake           | 1                                                                                 | G                                                                                   |
| 0V Brake               | 2                                                                                 | F                                                                                   |
| Earth                  |  |  |
| DSL+                   | 3                                                                                 | E                                                                                   |
| DSL-                   | 4                                                                                 | H                                                                                   |

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