

# TKW615 series



## Main features



Extremely rugged parts with a high accuracy



Housing sealed against oil, moisture and dust



Standard pulses up to 3600 pulses per revolution (without count multiplication logic)



Output capacity over 100 kHz

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N

[illegible]

TKW 615 N

TKW  
615N

## TECHNICAL CHARACTERISTICS

|                                                  |                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Models</b>                                    | TKW6151 unidirectional<br>TKW6152 unidirectional+ zero index<br>TKW6161 bi-directional<br>TKW6162 bi-directional+ zero index                                                                                                                                                                                                               |
| <b>Standard no. of increments per revolution</b> | 2 - 5 - 10 - 20 - 25 - 32 - 36 - 40 - 50 - 60 - 64 - 72 - 80 - 88 - 90 - 100 - 120 - 125 - 127 - 128 - 150 - 180 - 200 - 240 - 250 - 254 - 256 - 300 - 314 - 360 - 375 - 400 - 500 - 512 - 576 - 600 - 625 - 635 - 720 - 750 - 800 - 900 - 1000 - 1024 - 1200 - 1250 - 1270 - 1440 - 1500 - 1800 - 2000 - 2048 - 2500 - 2540 - 2700 - 3600 |

## MECHANICAL CHARACTERISTICS

|                                  |                                                                                            |
|----------------------------------|--------------------------------------------------------------------------------------------|
| <b>Assembly</b>                  | See drawing                                                                                |
| <b>Dimension</b>                 | See drawing                                                                                |
| <b>Mass</b>                      | 0,3 kg                                                                                     |
| <b>Slewing speed</b>             | 10.000 rpm for short period; 6.000 rpm for normal operation                                |
| <b>Shaft diameter</b>            | --                                                                                         |
| <b>Hollow shaft</b>              | Diameter 15 mm; depth 25 mm - optional diameter 6 mm                                       |
| <b>Shaft seal</b>                | Not available                                                                              |
| <b>Starting torque at 25 °C</b>  | 0,035 Nm                                                                                   |
| <b>Starting inertia</b>          | 60 g/cm <sup>2</sup>                                                                       |
| <b>Acceleration</b>              | 150.000 rad/s <sup>2</sup> (glass disc); 200.000 rad/s <sup>2</sup> (flexible disc - "DP") |
| <b>Ball bearing working life</b> | 10 <sup>9</sup> revolution min.                                                            |
| <b>Low torque</b>                | Not available                                                                              |
| <b>Shaft loading</b>             | Axial 200 N; radial 200 N                                                                  |

## MATERIALS

|                     |                                                                      |
|---------------------|----------------------------------------------------------------------|
| <b>Mainframe</b>    | "Al" anticorodal thermally stabilised                                |
| <b>Housing</b>      | ABS anti-shock reinforced with fibre glass                           |
| <b>Shaft</b>        | Stainless steel                                                      |
| <b>Light source</b> | GaAsAl infrared light emitting diode MTBF 10 <sup>5</sup> hours min. |
| <b>Receivers</b>    | Two opto-receivers in push-pull for each channel                     |

## ENVIRONMENTAL CHARACTERISTICS

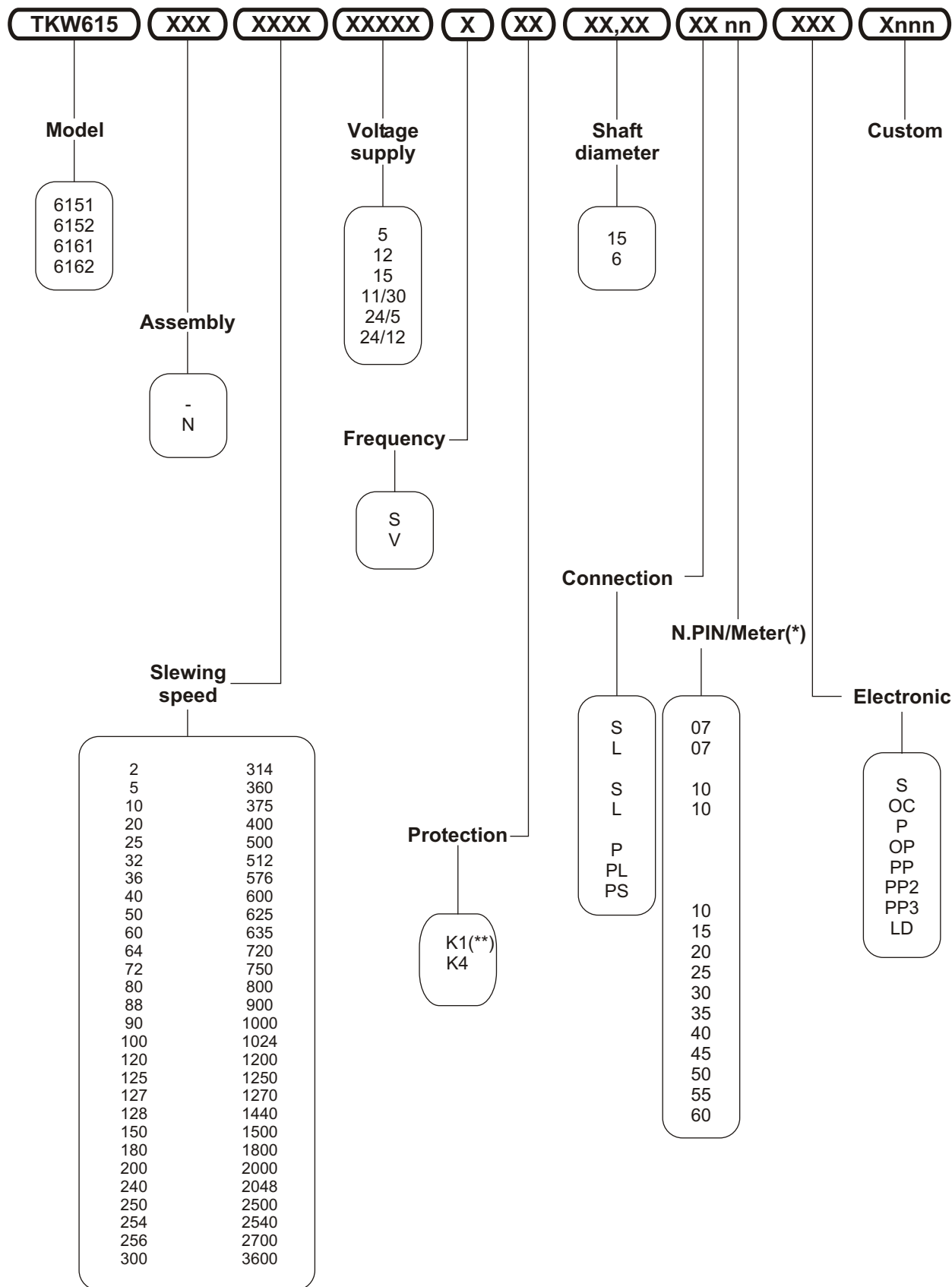
|                              |                                                                 |
|------------------------------|-----------------------------------------------------------------|
| <b>Operating temperature</b> | -10 ÷ +70 °C                                                    |
| <b>Storage temperature</b>   | -30 ÷ +80 °C                                                    |
| <b>Humidity</b>              | Up to 98 % RH without condensation                              |
| <b>Protection</b>            | K1 IP 55 per DIN 40050 (only with gland) K1 IP 55 per DIN 40050 |
| <b>Vibrations</b>            | 10 g (10 ÷ 2000 Hz)                                             |
| <b>Shock</b>                 | 20 g for 11 ms                                                  |

## ELECTRICAL CHARACTERISTICS

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Zero index</b>                            | Gated on channel A, B, A+B, depending on the model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Voltage supply (c.c.)</b>                 | 5 V ±5 %<br>12 V ±5 % 15 V ±5 % (only LD)<br>11/30 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Power consumption</b>                     | 150 mA max                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Protection</b>                            | Against polarity reverse (not 5 Vcc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Frequency range (T = -10 °C ÷ +70 °C)</b> | <b>S</b> 0 ÷ 50 kHz (standard)<br><b>V</b> 0 ÷ 100 kHz (fast option)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Output</b>                                | <b>S</b> NPN standard (pull-up resistor included)<br><b>OC</b> NPN open collector<br><b>P</b> PNP (pull-down resistor included)<br><b>OP</b> PNP open collector<br><b>PP</b> push-pull (NPN + PNP)<br><b>PP2</b> push-pull with short circuit protection<br><b>PP3</b> push-pull complemented (only high cover)<br><b>LD</b> line driver RS422 a 5 V (Motorola 26LS31) only with supply of 5 or 24/5<br><b>LD</b> line driver RS422 a 12 V (National MM88C30) only with supply of 12 or 24/12<br><b>LD</b> line driver RS422 a 15 V (National MM88C30) only with supply of 15 |

## CONNECTION CONFIGURATIONS

|                                                    |                                                                                                                                                                                                                                                             |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output configurations S, OC, P, OP, PP, PP2</b> | <b>P</b> on axial cable gland with cable 1 ÷ 6 m; <b>PL</b> on radial cable gland with cable 1 ÷ 6 m long ;<br><b>PS</b> cap radial cable gland with cable 1 ÷ 6 m long; <b>S</b> on 7 pind axial MIL connector; <b>L</b> on 7 pins radial MIL connector.   |
| <b>Output configuration LD and PP3</b>             | <b>P</b> on axial cable gland with cable 1 ÷ 6 m; <b>PL</b> on radial cable gland with cable 1 ÷ 6 m long ;<br><b>PS</b> cap radial cable gland with cable 1 ÷ 6 m long; <b>S</b> on 10 pind axial MIL connector; <b>L</b> on 10 pins radial MIL connector. |



(\*) 10 = 1,0 m ... 60 = 6,0 m

(\*\*) Only gland exit