

# SIEMENS

## Product data sheet

6FX2001-2GB00



Fig. similar

INCREM. ENCODER WITH RS 422 (TTL),  
1000 P/R SYNCHRO-FLANGE SHAFT 6MM  
OPERATING VOLTAGE: 5 V AXIAL FLANGE  
CONNECTOR

|                                                                          |                                 |
|--------------------------------------------------------------------------|---------------------------------|
| product brand name                                                       | Measuring systems               |
| Design of the interface                                                  | TTL / RS 422                    |
| Measuring method / for position feedback                                 | Incremental                     |
| Operating voltage VP at the encoder                                      | 5 V                             |
| Relative symmetric tolerance of the operating voltage                    | 10 %                            |
| Scanning frequency                                                       |                                 |
| • maximum                                                                | 300 kHz                         |
| Current consumption without load                                         |                                 |
| • max.                                                                   | 150 mA                          |
| Signal level                                                             | TTL (RS 422)                    |
| Outputs protected against short circuit to 0 V                           | Yes                             |
| Switching time (10 ... 90 %) for 1 m cable and recommended input circuit |                                 |
| • note                                                                   | Rise / fall time $t_+/t_- \leq$ |
| • max.                                                                   | 50 ns                           |

|                                                                                                                                                                                |                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Phase position signal A to B                                                                                                                                                   | 90 °                                           |
| Edge spacing at<br>• 300 kHz / min.                                                                                                                                            | 0.45 µs                                        |
| Length of cable to subsequent electronics<br>• max.                                                                                                                            | 100 m                                          |
| LED failure monitoring                                                                                                                                                         | High impedance driver                          |
| Resolution<br>• max.                                                                                                                                                           | 1000                                           |
| Precision                                                                                                                                                                      | 65 "                                           |
| Speed / electric<br>• max.                                                                                                                                                     | 18000 1/min                                    |
| Speed / mechanical / max.                                                                                                                                                      | 12000 1/min                                    |
| Friction torque at 20°C / max.                                                                                                                                                 | 0.01 N·m                                       |
| Starting torque at 20 °C / max.                                                                                                                                                | 0.01 N·m                                       |
| Shaft load capacity<br>• at $n > 6000$ rpms<br>• axially, max.<br>• radially on shaft end, max.<br>• at $n \leq 6000$ rpms<br>• axially, max.<br>• radially on shaft end, max. | 10 N<br>20 N<br>40 N<br>60 N                   |
| External diameter / of rotary encoder shaft                                                                                                                                    | 6 mm                                           |
| Length of encoder shaft                                                                                                                                                        | 10 mm                                          |
| Angular acceleration / maximum                                                                                                                                                 | 100000 rad/s <sup>2</sup>                      |
| Moment of inertia of the rotor                                                                                                                                                 | 0.00000145 kg·m <sup>2</sup>                   |
| Vibration 55 to 2000 Hz according to DIN IEC 60068-2-6 / max.                                                                                                                  | 300 m/s <sup>2</sup>                           |
| Shock according to EN 60068-2-27<br>• 2ms, max.<br>• 6ms, max.                                                                                                                 | 2000 m/s <sup>2</sup><br>1000 m/s <sup>2</sup> |
| IP degree of protection<br>• without shaft input<br>• with shaft input                                                                                                         | IP67<br>IP64                                   |
| Ambient temperature / during operation                                                                                                                                         |                                                |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• with flange socket or fixed installation cable, at               <ul style="list-style-type: none"> <li>• <math>V_p = 5\text{ V} \pm 10\%</math>, min.</li> <li>• <math>V_p = 5\text{ V} \pm 10\%</math>, max.</li> </ul> </li> <li>• with flexible installation cable, at               <ul style="list-style-type: none"> <li>• <math>V_p = 5\text{ V} \pm 10\%</math>, min.</li> <li>• <math>V_p = 5\text{ V} \pm 10\%</math>, max.</li> </ul> </li> </ul> | -40 °C<br>100 °C<br><br>-10 °C<br>100 °C                                                                  |
| Weight, approx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.3 kg                                                                                                    |
| EMC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Tested according to the EMC guidelines 89/336/EEC and the rules of the EMC guidelines (generic standards) |
| Approval, accord. to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CE, cULus                                                                                                 |
| Flange type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Synchro flange                                                                                            |
| Direction of connection opening                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Axial                                                                                                     |
| Design of the electrical connection                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Flange socket                                                                                             |

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**last change:**

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