

# SIEMENS

## Product data sheet

6FX2001-5SS12

product brand name

Measuring systems

ABSOLUTE VALUE ENCODER SINGLETURN 13 BIT  
WITH SSI,  
OPERAT. VOLT. 10-30 V STRIP FLANGE SHAFT  
10MM AXIAL FLANGE SOCKET



Fig. similar

|                                            |                                                             |
|--------------------------------------------|-------------------------------------------------------------|
| Measuring method / for position feedback   | Absolute                                                    |
| Operating principle of absolute encoder    | Singleturn                                                  |
| Operating voltage VP at the encoder / min. | 10 V                                                        |
| Operating voltage VP at the encoder / max. | 30 V                                                        |
| Current drawn / typical                    | 160 mA                                                      |
| Design of the interface                    | SSI                                                         |
| Clock input                                | Differential line receiver according to EIA Standard RS 485 |
| Data output                                | Differential line driver according to EIA Standard RS 485   |
| Short-circuit strength                     | Yes                                                         |
| Clock frequency                            | 100 kHz ... 1 MHz                                           |
| Speed                                      |                                                             |
| • electrical                               |                                                             |

|                                                                                                                                                                                                                                                                                                                                                                                                      |                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <ul style="list-style-type: none"> <li>• with <math>\pm 1</math> bit accuracy / max.</li> <li>• with <math>\pm 100</math> bit accuracy / max.</li> <li>• mechanical / max.</li> </ul>                                                                                                                                                                                                                | 5000 1/min<br>10000 1/min<br>12000 1/min |
| Length of cable to subsequent electronics <ul style="list-style-type: none"> <li>• up to 1 MHz, max.</li> <li>• up to 100 kHz, max.</li> <li>• up to 300 kHz, max.</li> </ul>                                                                                                                                                                                                                        | 50 m<br>400 m<br>100 m                   |
| Digital resolution <ul style="list-style-type: none"> <li>• note</li> </ul>                                                                                                                                                                                                                                                                                                                          | 13 bit<br>(8192 increments)              |
| Telegram <ul style="list-style-type: none"> <li>• note</li> </ul>                                                                                                                                                                                                                                                                                                                                    | 13 bit<br>Without parity                 |
| Code type <ul style="list-style-type: none"> <li>• Sampling</li> <li>• Transfer</li> </ul>                                                                                                                                                                                                                                                                                                           | Gray<br>Gray, fir-tree format            |
| Parameterization capability <ul style="list-style-type: none"> <li>• Preset</li> <li>• Preset</li> <li>• Counting direction</li> </ul>                                                                                                                                                                                                                                                               | Yes<br>Set to zero<br>Yes                |
| Accuracy <ul style="list-style-type: none"> <li>• note</li> </ul>                                                                                                                                                                                                                                                                                                                                    | 79 "<br>(with 8192 increments)           |
| Friction torque at 20°C / max.                                                                                                                                                                                                                                                                                                                                                                       | 0.01 N·m                                 |
| Starting torque at 20 °C / max.                                                                                                                                                                                                                                                                                                                                                                      | 0.01 N·m                                 |
| Shaft load capacity <ul style="list-style-type: none"> <li>• at <math>n &gt; 6000</math> rpms               <ul style="list-style-type: none"> <li>• axially, max.</li> <li>• radially on shaft end, max.</li> </ul> </li> <li>• at <math>n \leq 6000</math> rpms               <ul style="list-style-type: none"> <li>• axially, max.</li> <li>• radially on shaft end, max.</li> </ul> </li> </ul> | 10 N<br>20 N<br>40 N<br>60 N             |
| Length / of rotary encoder shaft                                                                                                                                                                                                                                                                                                                                                                     | 20 mm                                    |
| Angular acceleration / maximum                                                                                                                                                                                                                                                                                                                                                                       | 100000 rad/s <sup>2</sup>                |
| Moment of inertia of rotor <ul style="list-style-type: none"> <li>• Solid shaft</li> </ul>                                                                                                                                                                                                                                                                                                           | 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    |                                     |
| • 2ms, max.                         | 2000 m/s <sup>2</sup>               |
| • 6ms, max.                         | 1000 m/s <sup>2</sup>               |
| IP degree of protection             |                                     |
| • without shaft input               | IP67                                |
| • with shaft input                  | IP64                                |
| Ambient temperature                 |                                     |
| • during operating                  | -40 ... +85 °C                      |
| Weight, approx.                     | 0.35 kg                             |
| EMC                                 | Tested to DIN EN 50081 and EN 50082 |
| Approval, accord. to                | CE, cULus                           |
| Design of the electrical connection | Flange socket                       |
| Direction of connection opening     | Axial                               |
| Flange type                         | Clamping flange                     |
| Design of rotary encoder shaft      | Solid shaft                         |

#### Further information

[Information and download center for Industry Automation and Drives](#)

[Technical documentation \(Motion Control\)](#)

[Industry Mall \(online ordering system\)](#)

[Service & Support \(FAQs, manuals, operating instructions, certificates, characteristics, ...\)](#)

**last change:**

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