

# SIEMENS

## Product data sheet

**6FX2001-5QN25**

product brand name

Measuring systems

 ABS.VALUE ENCODER MULTITURN 27 BIT WITH  
 PROFINET OPERATE VOLTAGE 10-30V CLAMP  
 FLANGE / SHAFT 10MM CONNECTOR M12 RADIAL


Fig. similar

Measuring method / for position feedback	Absolute
Operating principle of absolute encoder	Multiturn
Operating voltage VP at the encoder / min.	10 V
Operating voltage VP at the encoder / max.	30 V
Design of the interface	PROFINET IO mit RT / IRT
Clock input	Differential line driver according to EIA Standard RS 485
Data output	PNO encoder profile
Short-circuit strength	Yes
LED for diagnostics	Yes (green/red/yellow)
Transfer rate	100 Mbit/s
Speed	
<ul style="list-style-type: none"> <li>• electrical</li> <li>• with <math>\pm 1</math> bit accuracy / max.</li> </ul>	5800 1/min

• mechanical / max.	6000 1/min
Length of cable to subsequent electronics	
• max.	100 m
Digital resolution	27 bit
• note	(8192 increments x 16384 rpms)
Code type	
• Sampling	Gray
• Transfer	Binary, PROFINET
Parameterization capability	
• Preset	Yes
• Preset	Any
• Counting direction	Yes
Accuracy	79 "
• note	with 8192 increments ( $\pm 1/2$ LSB)
Friction torque at 20°C / max.	0.01 N·m
Starting torque at 20 °C / max.	0.01 N·m
Shaft load capacity	
• at $n > 6000$ rpms	
• axially, max.	10 N
• radially on shaft end, max.	20 N
• at $n \leq 6000$ rpms	
• axially, max.	40 N
• radially on shaft end, max.	110 N
Length / of rotary encoder shaft	20 mm
Angular acceleration / maximum	100000 rad/s <sup>2</sup>
Moment of inertia of rotor	
• Solid shaft	0.00000301 kg·m <sup>2</sup>
Vibration 55 to 2000 Hz according to DIN IEC 60068-2-6 / max.	100 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.	0.43 kg
EMC	Tested to DIN EN 50081 and EN 50082
Approval, accord. to	CE, cULus
Current consumed • maximum / note	130 ... 400 mA Differential line receiver according to EIA Standard RS 485
Design of the electrical connection	2 x connector M12, 4-pin for PROFINET Ports, 1 x connector M12, 4-pin for operating voltage
Telegram	According to PNO encoder profile V4.1 Class1, Class 2, Class 3, Class 4, standard telegrams 81/82/83/84, Siemens telegram 860
Direction of connection opening	Radial
Cycle time / min.	1 ms
Cycle time / max.	100 ms
Parameterization capability • Resolution per revolution • note • Total resolution • note • Speed signal • Limit switches • Isochronous mode • Slave-to-slave communication	Yes Any 1 ... 8192 Yes Any 1 ... 16384 Yes No Yes No
Online parameterization	Yes
Approval, accord. to	Yes
Profile / is supported	PNO encoder profile V4.1
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:**

Jul 3, 2014