

ABSOLUTE VALUE ENCODER 25 BIT 6FX2001-5FP24
SYNCHRONOUS WITH PROFIBUS DP OPERATING VOLTAGE 10-30
V SYNCHROFLANGE WITH HOOD AND PG RADIAL



Figure similar

product brand name	Measuring systems
Measuring procedure / for position feedback	absolute
Manner of function / of absolute encoder	multiturn
Operating voltage / of the rotary encoder / at DC	10 ... 30
Design of the interface	PROFIBUS DP-V2
Design of input / for clock cycle	Differential line receiver according to EIA Standard RS 485
Design of encoder output	Differential line driver according to EIA Standard RS 485
Property of the output / Short-circuit proof	Yes
Display version / for diagnostic function	Yes (green/red)
Transfer rate	12 Mbit/s
Speed	
• for digital measuring accuracy +/- 1 bit / with electrical rotation transmission / maximum	5 800 1/min
• maximum	6 000 1/min
Digital resolution	27 bit; (8192 increments x 16384 rpms)
Type of coding	
• for sampling	Gray
• for transmission	binary, PROFIBUS

Product function	
• parameterizable preset	Yes; Any
• parameterizable counting direction	Yes
Measurement deviation angle of rotation / of absolute encoder	79°; with 8192 increments ($\pm 1/2$ LSB)
Friction torque / at 20 °C / maximum	0.01 N·m
Starting torque / at 20 °C / maximum	0.01 N·m
Axial force / at shaft	
• with $n > 6000$ rpm / maximum	10 N
• with $n \leq 6000$ rpm / maximum	40 N
Cantilever force / at shaft extension	
• with $n > 6000$ rpm / maximum	20 N
• with $n \leq 6000$ rpm / maximum	110 N
Rotary encoder shaft version	Solid shaft
Diameter / of rotary encoder shaft	6 mm
Length / of rotary encoder shaft	10 mm
Angular acceleration / maximum	100 000 rad/s ²
Moment of inertia / of rotor	
• with solid shaft encoder	0.0000019 kg·m ²
Vibrational acceleration / at 55 Hz ... 2 kHz / acc. to IEC 60068-2-6	100 m/s ²
Shock acceleration	
• limited to 2 ms / acc. to IEC 60068-2-27	2 000 m/s ²
• limited to 6 ms / acc. to IEC 60068-2-27	1 000 m/s ²
Protection class IP	
• without shaft input	IP67
• with shaft input	IP64
Ambient temperature / during operation	-40 ... +85
EMI immunity	Tested to DIN EN 50081 and EN 50082
Certificate of suitability	CE, cULus
Consumed current / minimum	100 mA
Consumed current / maximum	300 mA; (2.5 W)
Wire length	
• at 93.75 kbit/s / maximum	1 200 m
• at 1.5 Mbit/s / maximum	200 m
• at 12 Mbit/s / maximum	100 m
Number of bus nodes	99
Type of electrical connection	Terminal block with address selector switch and bus terminating resistor in removable cover with radial cable glands (3 units) terminating resistor in removable cover with radial cable glands (3 units)
Telegram format	According to PNO encoder profile V4.1 Class1, Class 2, Class 3, standard telegram 81
Direction of connection opening	Radial

Outer diameter / of cable sheath / at DC output / can be used / minimum	6.5 mm
Outer diameter / of cable sheath / at DC output / can be used / maximum	9 mm; Tube dismantling possible without bus interruption
Bus cycle time / per absolute encoder / typical	20 µs; Per encoder at 12 Mbit/s
Measuring cycle	667 µs
Product function	
• parameterizable resolution per revolution	Yes
• parameterizable resolution per revolution / Note	Any 1 ... 8192
• parameterizable total resolution	Yes
• parameterizable total resolution / Note	Any 1 ... 8192 x 16384
• parameterizable speed signal	Yes
• parameterizable limit switch	Yes
• parameterizable limit switch / Note	2 pieces
• parameterizable isochronous mode	Yes
• Slave-to-slave communication parameterizable	Yes
• online parameterization	Yes
Certificate of suitability / PI certificate	Yes
Profile / is supported	PNO encoder profile V4.1
Flange type	Synchro flange
Net weight	0.5 kg

Further information

Information und Download Center

https://www.automation.siemens.com/mcms/infocenter/content/en/Pages/order_form.aspx

Technical documentation

<http://w3.siemens.com/mcms/mc-solutions/en/motion-control/support/technical-documentation/Pages/technical-documentation.aspx>

Industry Mall

<https://eb.automation.siemens.com/mall/en/WW/Catalog/Product/6FX2001-5FP24/all>

Industry Online Support

<http://support.automation.siemens.com/WW/view/en/6FX2001-5FP24/all>

last modified:

11/01/2016