

VXT-E50S08-2500-T

Incremental Encoder | ø50 mm | 2500 PPR | Totem Pole

Product Overview



The VXT-E50S08-2500-T is a 50 mm incremental rotary encoder with a ø8 mm solid shaft and a resolution of 2500 pulses per revolution. Totem-pole (push-pull) outputs on three channels (A, B and Z index) drive both NPN and PNP type counter inputs over a wide 8–26 V DC supply, making it a universal choice for retrofits. A 2 m shielded radial cable, robust housing and ball-bearing shaft support make it well suited to continuous duty on industrial machines.

Key Features

- ✓ Resolution 2500 PPR, A/B quadrature + Z index
- ✓ Housing ø50 mm, ø8 mm solid shaft (g6)
- ✓ Totem pole (push-pull) output
- ✓ Supply voltage 8 ... 26 V DC
- ✓ Response frequency up to 300 kHz
- ✓ Max. operating speed 6000 rpm
- ✓ Shaft load up to 30 N radial / 20 N axial
- ✓ 2 m shielded radial cable with open-ended leads
- ✓ Synchro flange with ø30 mm spigot, 3 × M4 mounting
- ✓ Operating temperature –20 ... +85 °C, IP54

Applications

Packaging Machines • Printing Machines • Conveyors & Material Handling • Textile Machinery • Cut-to-length Lines • PLC & Counter Inputs (NPN or PNP)

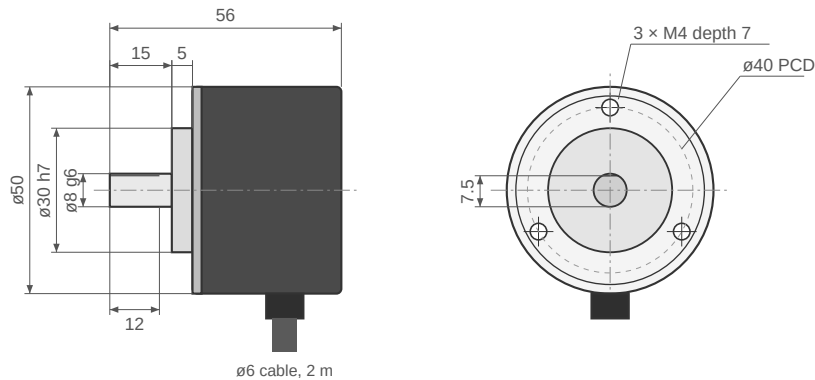
Technical Specifications

GENERAL SPECIFICATIONS	
Encoder Type	Incremental rotary encoder, optical
Resolution	2500 pulses per revolution (PPR)
Output Channels	A, B (90° phase shift), Z (1 pulse/rev)
Output Circuit	Totem pole (push-pull)
Supply Voltage	8 ... 26 V DC
Housing Diameter	ø50 mm
Shaft	ø8 mm solid shaft, g6, with flat
Connection	Radial cable, shielded, 2 m
Protection Degree	IP54

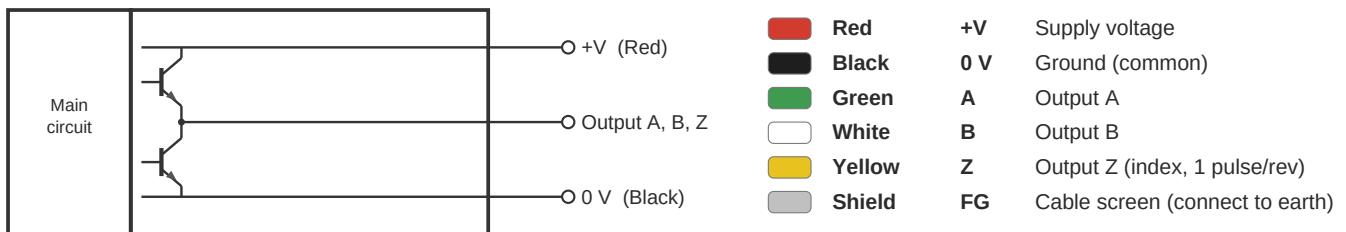
Technical Specifications (continued)

ELECTRICAL	
Supply Voltage Vcc	8 ... 26 V DC
Current Consumption	≤ 120 mA
Output Voltage High VH	> Vcc – 2.5 V
Output Voltage Low VL	≤ 0.7 V
Rise Time	≤ 500 ns
Fall Time	≤ 100 ns
Max. Response Frequency	300 kHz
Max. Electrical Speed	7200 rpm (300 kHz × 60 ÷ 2500 PPR)
Max. Operating Speed	6000 rpm (lower of mechanical and electrical limit)
Output Protection	Short-circuit protection diode to 0 V
Signal Interface	Works with both NPN (sinking) and PNP (sourcing) counter inputs
SIGNAL CHARACTERISTICS	
Duty Ratio	X1 + X2 = 0.5 T ± 0.1 T; X2 + X3 = 0.5 T ± 0.1 T
Phase Difference A–B	Xn ≥ 0.125 T (n = 1 ... 4)
Absolute Angle Error	≤ 0.2 T
Cycle Error	≤ 0.05 T
Z Pulse Width	1 T ± 0.5 T
Direction	CW viewed from shaft end: A leads B by 90°
MECHANICAL	
Max. Mechanical Speed	6000 rpm
Starting Torque	≤ 1 mN·m (at 25 °C)
Max. Shaft Load	Radial 30 N, axial 20 N
Moment of Inertia	40 g·cm ²
Shaft	ø8 mm g6, solid, with flat
Mounting	3 × M4, depth 7 mm, equally spaced on ø40 mm PCD
Cable	ø6 mm shielded, 2 m, radial exit
Mass	approx. 190 g
ENVIRONMENT	
Operating Temperature	–20 ... +85 °C (–4 ... +185 °F)
Storage Temperature	–30 ... +95 °C
Relative Humidity	35 ... 85 % RH, non-condensing
Shock Resistance	50 m/s ² , 3 times each in X, Y, Z axes, 6 ms
Vibration Resistance	20 m/s ² , 10 ... 200 Hz, 2 h each in X, Y, Z axes
Protection Degree	IP54

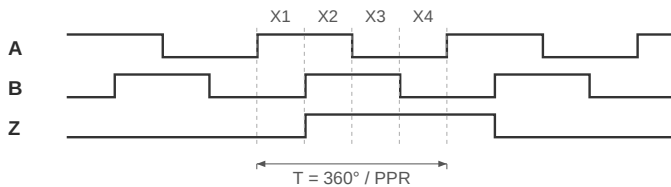
Product Dimensions



Connection Assignment (Totem Pole)



Output Waveform



Waveform shown for clockwise (CW) rotation viewed from the shaft end. Channel B lags channel A by 90° electrical; for counter-clockwise rotation B leads A. The Z index pulse occurs once per revolution.

Ordering Information

Model Number	Resolution	Output	Supply / Cable
VXT-E50S08-2500-T	2500 PPR	Totem pole, A/B/Z	8 ... 26 V DC, 2 m

Code key: E50 = housing $\varnothing 50$ mm • S08 = solid shaft $\varnothing 8$ mm • 2500 = PPR • T = totem pole

Notes

- Switch off the power supply before wiring. Connect the encoder strictly as per the connection assignment; incorrect wiring may damage the output circuit.
- Totem-pole outputs can be connected to either NPN- or PNP-type counter inputs.
- Use a flexible coupling between the encoder shaft and the machine shaft, and do not exceed the permissible shaft loads. Do not hammer or apply shock to the shaft.
- Route the encoder cable away from power cables and inverters; earth the cable shield at the controller end.
- Dimensions are nominal. Specifications are subject to change without notice; please contact Voxintech for the latest specifications and certified drawings.