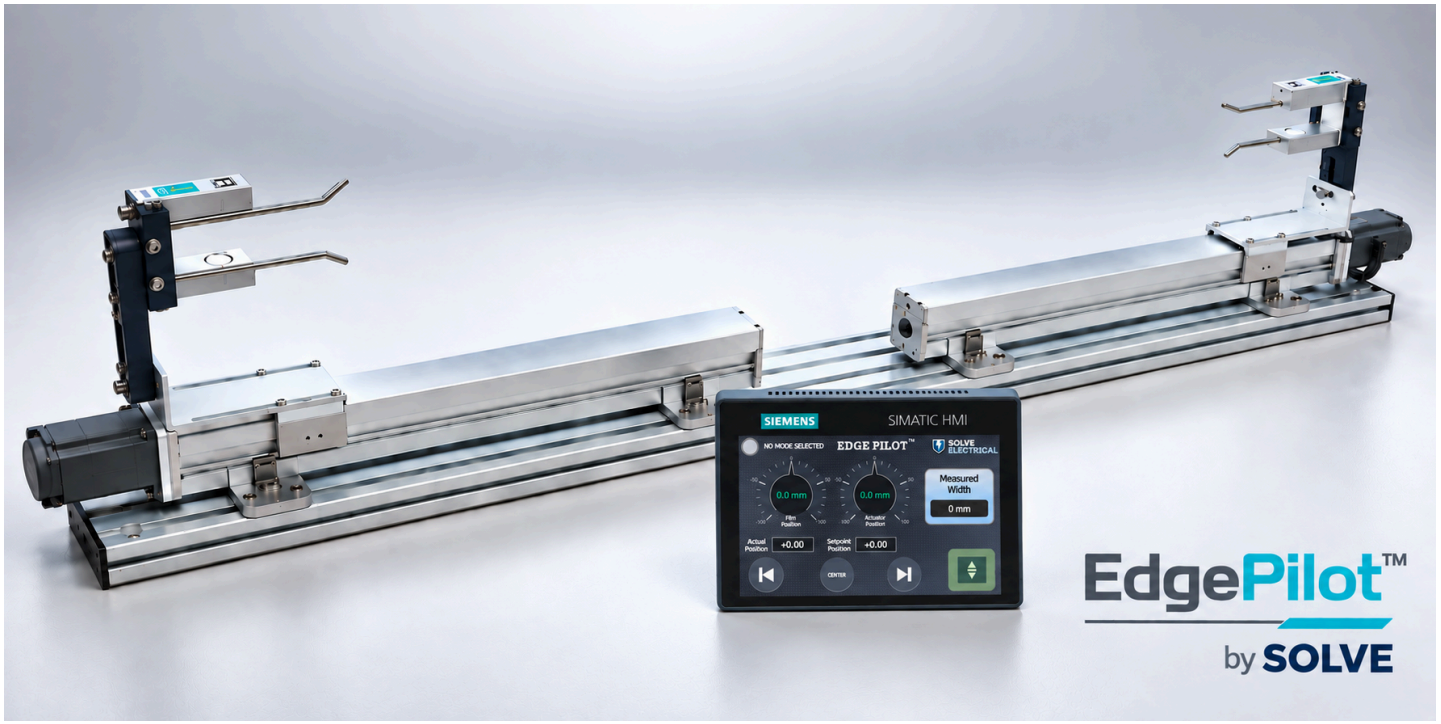
EDGEPILOT™ EP-3AX

DUAL-EDGE AUTOMATIC WEB GUIDING SYSTEM

Precision lateral web guiding, live web-width measurement and three-axis servo control



PRODUCT OVERVIEW

EdgePilot™ EP-3AX is a three-axis, servo-controlled web guiding system designed to track both edges of a moving web, continuously calculate web width and apply precise steering correction. Two motorised ultrasonic sensor carriages follow the left and right web edges while an independent steering axis maintains the operator-defined lateral position.

CONTROL PLATFORM

Siemens S7-1200 PLC, three PROFINET servo drives and a Unified Comfort HMI provide coordinated motion, automatic homing, live process data and diagnostics.

APPLICATIONS

Designed for continuous-web and roll-to-roll manufacturing processes requiring accurate lateral positioning, automatic centering and live web-width monitoring. Typical applications include flexible packaging, plastic film processing, paper and converting machinery, coating and laminating lines, slitting and rewinding equipment, extrusion and film-processing lines, foil and laminated materials, and other continuous-web processes compatible with ultrasonic edge detection.

PRECISION GUIDING

- Dual ultrasonic edge sensing
- Typical guiding accuracy approx. ±0.5 mm*
- Software deadband around the 50% sensor target

INTELLIGENT MOTION

- Three independent servo axes
- Motorised left and right sensor carriages
- Servo-driven steering correction

OPERATOR CONTROL

- Live web-width calculation
- Centre or operator-selected lateral offset
- Automatic homing, manual jog and diagnostics

TECHNICAL SPECIFICATIONS

CURRENT DESIGN CONFIGURATION - APPLICATION-SPECIFIC MECHANICAL INTEGRATION MAY VARY

EdgePilot™ by SOLVE

PARAMETER	SPECIFICATION
GUIDING & SENSING	
Guiding method	Dual-edge automatic web guiding
Typical guiding accuracy	Approximately ±0.5 mm under stable running conditions*
Edge sensing	2 x ultrasonic edge sensors
Sensor measuring span	20 mm per sensor
Tracking deadband / hysteresis	Software deadband around the 50% target; design basis approximately ±0.4 mm equivalent at the sensor
Web width measurement	Calculated continuously from the two tracked edge positions
Web-width range	Custom-configured to suit the customer's application
Web position setpoint	Centre position or operator-selected lateral offset
HOMING & MECHANICAL	
Homing	Automatic homing/reference routine for all three axes
Home sensing	Proximity sensor reference on each axis
Mechanical construction	Modular aluminium extrusion and linear carriage construction

PARAMETER	SPECIFICATION
MOTION & CONTROL	
Motion architecture	3 independent servo axes
Servo axes	Left sensor carriage, right sensor carriage, steering actuator
Servo drives	3 x A6-PN PROFINET servo drives
PLC	Siemens S7-1200 CPU 1214C
HMI	Siemens MTP400 Unified Comfort Panel, 4.3-inch (Optional 7-inch HMI available)
ELECTRICAL & ENVIRONMENTAL	
Incoming supply	230 VAC, 1-phase, 50/60 Hz - other configurations available
Control voltage	24 VDC
Connected load	Application-specific; stated on system nameplate and project documentation
Protection rating	IP54
Ambient operating temperature	0°C to +40°C
Relative humidity	<80% RH, non-condensing
Installation environment	Indoor industrial environment, non-condensing
Sensor supply	24 VDC
Sensor analogue signal	0-5 V
Sensor discrete output	PNP normally-open
Drive communications	PROFINET
Control network	PROFINET between PLC and servo drives

APPLICATION-SPECIFIC CONFIGURATION

EdgePilot™ is configured to suit each machine and process. Web width, sensor-carriage travel, steering-actuator travel, recommended line speed, mechanical dimensions, mounting arrangements and interfaces are specified for each installation.

OPERATOR MODES

AUTO Normal automatic edge tracking and web-position correction.

OFF Stops automatic control and is used for the homing sequence.

OPEN Moves both sensor carriages outward for maximum web clearance; steering correction remains inactive.

MANUAL / SERVICE Maintenance and commissioning functions including axis jogging and diagnostics.

CUSTOM ENGINEERING & INTEGRATION

EdgePilot™ is engineered to integrate with new or existing machinery. Mechanical width, actuator travel, mounting arrangements, machine interfaces and control integration can be configured for each application.

SOLVE can provide the complete system from mechanical and electrical design through PLC/HMI programming, machine integration, installation and commissioning.

PRODUCT IDENTIFICATION

Product: EdgePilot™
Model: EP-3AX
Manufacturer: Solve Electrical Ltd
Location: Auckland, New Zealand
Datasheet revision: Rev 1.5
Website: solveelectrical.co.nz
Warranty: 12 months on supplied equipment

ACCURACY / PERFORMANCE NOTE *Typical guiding accuracy is approximately ±0.5 mm under stable operating conditions and is not a guaranteed tolerance. Actual performance depends on web tension, stability, roller condition and mechanical alignment.

Designed and engineered in New Zealand by SOLVE