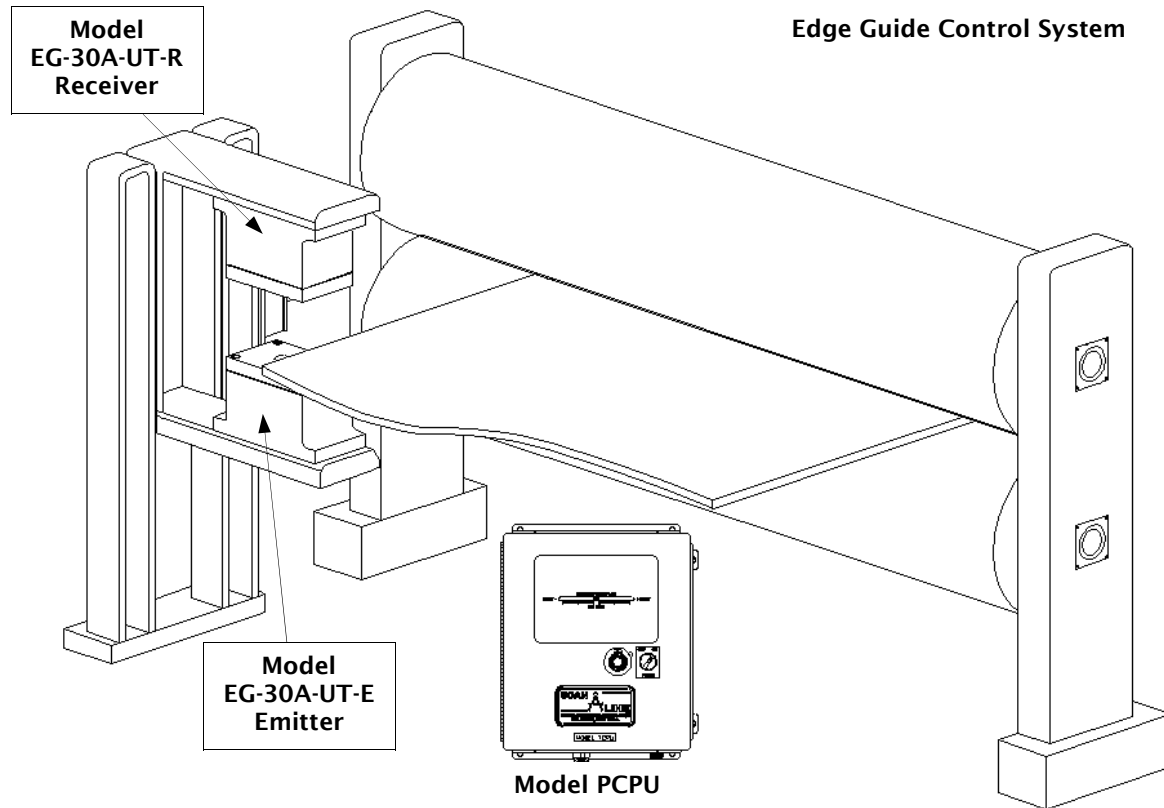


Edge Guide Control System



Edge Guide Control System

Modern process lines rely heavily on edge guide control systems to maintain proper strip position. From simple edge guiding to complex slitting operations, edge guide systems are critical to high quality process line control.

Most optical edge guide sensors rely upon the blockage of light with a corresponding reduction of video amplitude or surface reflection of light to locate a product edge. In theory, these systems may provide adequate edge guide control, but in the reality they fall far short of the needs of today's high capacity process lines. Lamps burn out. Smoke, dust and dirt drastically reduce the sensors' effectiveness. *Clear or translucent materials are almost impossible to guide.* Improper positioning of the material on the line can lead to improperly identified product, damage to the product, or unsuitable edge trimming.

The SCAN-A-LINE™ Edge Guide Control System (EGC System) alleviates the problems associated with improper strip positioning and are a key element in automating edge guide control. The EGC System is tough enough for edge guiding on steel trimmer lines and sensitive enough for blown film applications. The savings in improved quality and reduced maintenance costs will improve overall line efficiency and profit margins.

- 10XAS-Series Sensors Accurate to $\pm 0.005''$ [0.127mm] with linearity of $0.024''$ [0.6096mm] @ 2 sigma
- EG-Series Sensors Repeatability of $0.02''$ [0.51mm]
- PID or Time Proportional Control
- Patented Scanned LED Technology
- Solid-state Reliability
- NO MOVING PARTS
- Dust, Mist, and Vibration Tolerant
- Clear or Translucent Material Position Control Available
- Easy to Install, Simple to Maintain
- Several Analog Output Options Available
- Many Control Options Available

Edge Guide Control System Components:

- SCAN-A-LINE™ Edge Guide Sensors – EG-Series or 10XAS-Series Sensors
- PID Control Processing Unit – Model PCPU Level 1 (EG-Series) or Level 3 (10XAAS-Series)
- TPC Control Processing Unit – Model TCPU Level 1 (EG-Series) or Level 3 (10XAAS-Series)
- Up to 50 feet [15.2m] of cabling between the sensors and the processing unit

Edge Guide Control Processing Unit Features:

Proportional/Integral/Derivative (PID) Control Processing Unit – Model PCPU Level 1 or 3

Interfaces with most pneumatic or hydraulic proportional control valves or servo-valves in closed loop process control lines. The PID Control Amplifier (PID Module) in the Model PCPU provides a fully tunable deviation (bipolar) control signal. The Model PCPU Level 1 is designed for single EG-Series sensor systems while the Level 3 is designed for single 10XAAS-Series sensor systems.

Time Proportional Control (TPC) Control Processing Unit – Model TCPU Level 1 or Level 3

Available where no proportional or servo steering control valves are available. The TPC Controller supplies relay contact outputs to operate in parallel with existing manual jog switches. Relays close for a time proportional to position error (fully adjustable), as well as deadband control and transport delay. The Model TCPU Level 1 is designed for single EG-Series sensor systems while the Level 3 is designed for 10XAAS-Series sensor systems.

Bargraph Display [Both Models]

All Control Processing Units come standard with a Bargraph Display to visually represent the difference between a predetermined material position and the detected material position. Mounted on the door of the unit. Also included are control annunciators and limit relays. Can be mounted remotely (BGA50 Option) up to 50 feet [15.2m] from the Control Processing Unit.



Model PCPU Level 3 with Auto Zero

Analog Output Device – DA4 Module

Level 3 Dual-Sensor Analog Output Device includes three real-time analog outputs and three reference analog outputs. Provides absolute analog output of edge position as well as zero reference absolute analog output. Required for Auto-Zero Push-button Option and FEV Option. Requires 10XAS-Series sensors.

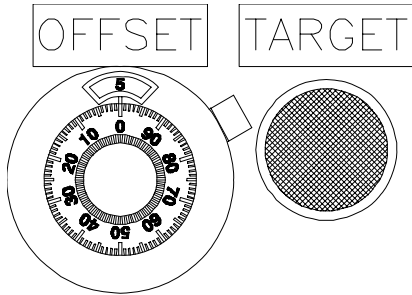


Model TCPU Level 1

Options for EGC System

Processing Units:

Auto-Zero Push-button (AZ Option) provides the selection of any strip material position as a reference position. Fully compatible with PID Module and TPC Module, though not recommended with OP Option. The AZ Option is a momentary push-button mounted on door and may be mounted remotely (AZ50 Option). {Model PCPU Level 3 or Model TCPU Level 3 only.}



Control Offset Multi-dial (OP Option) allows operator to introduce a finely-tuned offset to the control signal for final strip material positioning. Fully compatible with Model PCPU and Model TCPU (not recommended with AZ Option). Control Offset Multi-dial is also available in a remote mount configuration (OP50 Option).

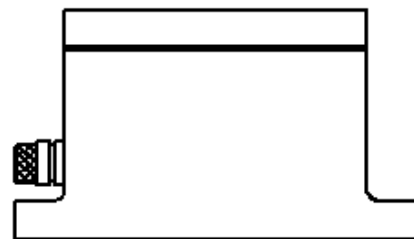
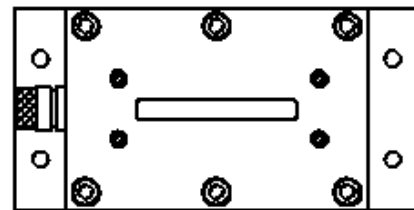
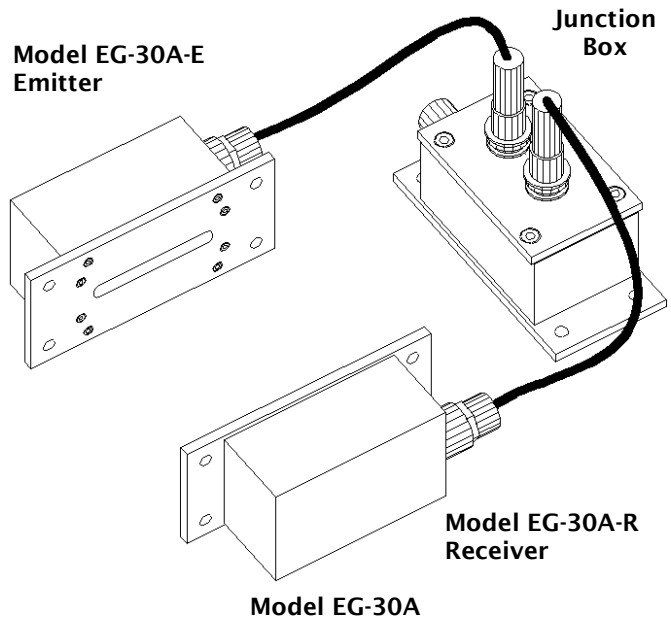
Line Receiver (LR Option) connects a Control Processing Unit with 10XAS-Series sensors to a sensor power processing unit (a Model GPU Level 2). This becomes necessary when sensors for the system must be located more than fifty linear cable feet [15m] from the Control Processing Unit. Maximum operational distance between the Control Processing Unit and the Model GPU Level 2 is 4000 linear cable feet [1200m]. Compatible with all Control Processing Unit features and options.

4/20mA Current Loop (4/20 Option) provides an isolated, long distance routing of analog signals from the Control Processing Unit to a PLC (or other analog input device). Compatible with most Control Processing Unit features and options.

Remote Bargraph Display (BGA/50 Option) utilizes the Bargraph Display normally mounted on the front door of the Control Processing Unit, allowing mounting of the display up to fifty linear cable feet [15m] from the processing unit. Available with all levels of the Model PCPU and Model TCPU.

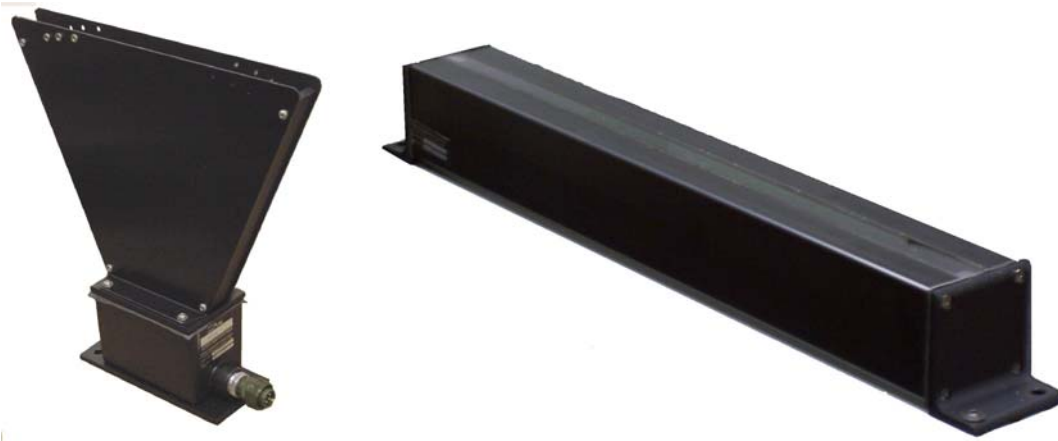
First Edge Video Pre-Processor (FEV Option) detects first edge viewed as the first edge of material, ignoring all other edges. May be required to edge guide clear, translucent or loosely-woven materials. Model PCPU Level 3 and Model TCPU Level 3 with 10XAS-Series sensors only.

Edge Guide Control System Sensors:



SCAN-A-LINE™ EG-Series sensors (shown above) are the low cost solution for edge guiding. They provide a detection range of 2.8 inches [71.1mm] for systems where edge position does not vary greatly.

The Model EG-30A and Model EG-30A-UT sensors have self-contained analog output circuits that produce a 0VDC to 10VDC (5VDC with emitter half-covered) position analog signal for interfacing with either the PID or TPC Modules for control of the strip position.



Model 10XAS-20E-B Sensor Set

SCAN-A-LINE™ 10XAS-Series Auto-Sync sensors allow for the greatest position variation in material guiding. 10XAS-Series sensors come in ten inch [25.4cm] increment lengths ranging from ten inches [25.4cm] up to forty inches [101.6cm]. All 10XAS-Series sensors require an analog output device in the processing unit (DA4 Module) to convert the digital sensor signals to analog for processing by the PID or TPC Modules.

SCAN-A-LINE™ Sensors Features:

- **High-speed edge position tracking for proportional position control**
- **Precise 2000 inch [508cm] per second scan velocity**
- **Position information is a function of time rather than light intensity**
- **Quartz Crystal controlled — won't drift out of adjustment**
- **Smoke, steam, dust and dirt have no effect on edge detection**
- **Nothing to burn out and *NO MOVING PARTS* mean virtually no maintenance worries**
- **LED's rated at 275-year mean-time-between-failure (MTBF) and carry a lifetime guarantee**
- **Corrosive resistant finishes (standard on EG-Series sensors and optional on 10XAS-Series sensors)**

Options for SEC System Sensors:

- **Infrared LED (IR Option):** Designed for operation in extremely hazy conditions that attenuate material detection. Also used for visible light intolerant materials. Available for both EG-Series and 10XAS-Series sensors
- **ULTRA-TOUGH™ enclosures (UT Option):** For applications where physical abuse and damage cannot be avoided. Available for both EG-Series or 10XAS-Series sensors.
- **On-Line Balance (OLB Option):** Allows sensor to be balanced on-line for peak performance. 10XAS-Series sensors only.
- **Clear Material (CLR Option):** Provides for detection of clear, translucent or loosely woven products (requires On-Line Balance Option). 10XAS-Series sensors only.



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