

# Gravitrol®

## EXD Extruder Drive Speed Control Module

## EXL Line Speed Control Module



***The Gravitrol® System: complete gravimetric extrusion control via drive speed control and line speed control (pictured above is an EXL card with pulse generator and encoder)***

PROCESS CONTROL's Gravitrol® Gravimetric Extrusion Control Systems automates the control of any extrusion line – coextrusion or monoextrusion – on the basis of weight.

A standard system has an HG Series Weigh Hopper mounted on each extruder to measure the extruders weight throughput. The weigh hopper reports the measurement to an EXB central computer, which controls the extruder drive and / or take-off device drive. Alternatively, PROCESS CONTROL X Series and Guardian® blenders can monitor extruder throughput and control the extruder drive and take-off device. In

both cases, the EXD Extruder Drive Control Module and the EXL Line Speed Control Module provide the interface for this communication.

The EXD Extruder Drive Speed Control circuit board is mounted on an L-bracket, that is designed for easy mounting in your existing drive cabinet. It can also be supplied in a stand-alone enclosure for remote mounting.

The EXL Line Speed Control Module consists of a circuit board on an L-bracket like the EXD Module. It also includes a pulse generator with encoder that accurately measures line speed for closed-loop control.

The EXD and EXL cards receive digital signals from the Gravitrol® central computer and send analog speed reference signals to the drives. This signal is 0-10V DC. These boards are custom-designed, programmed, and tested in-house by PROCESS CONTROL engineers.

Sophisticated programming allows the system to ramp all drives synchronously. This enables the Gravitrol® system to make smooth transitions from the current line output to a new target output while maintaining product integrity.

The EXD and EXL modules are designed for easy integration into a conventional extrusion control design with existing manual potentiometers or digital speed controls. The modules feature inputs for the manual speed control signals allow operators to use existing manual controls when required. The system is switched from manual to automatic (Gravitrol®) control through a single MANUAL / GRAVITROL® switch (available separately).

Gravitrol® also provides a computer-controlled manual mode that allows the operator to digitally set the speed of each extruder and / or line speed. This mode is normally used for line start-up.

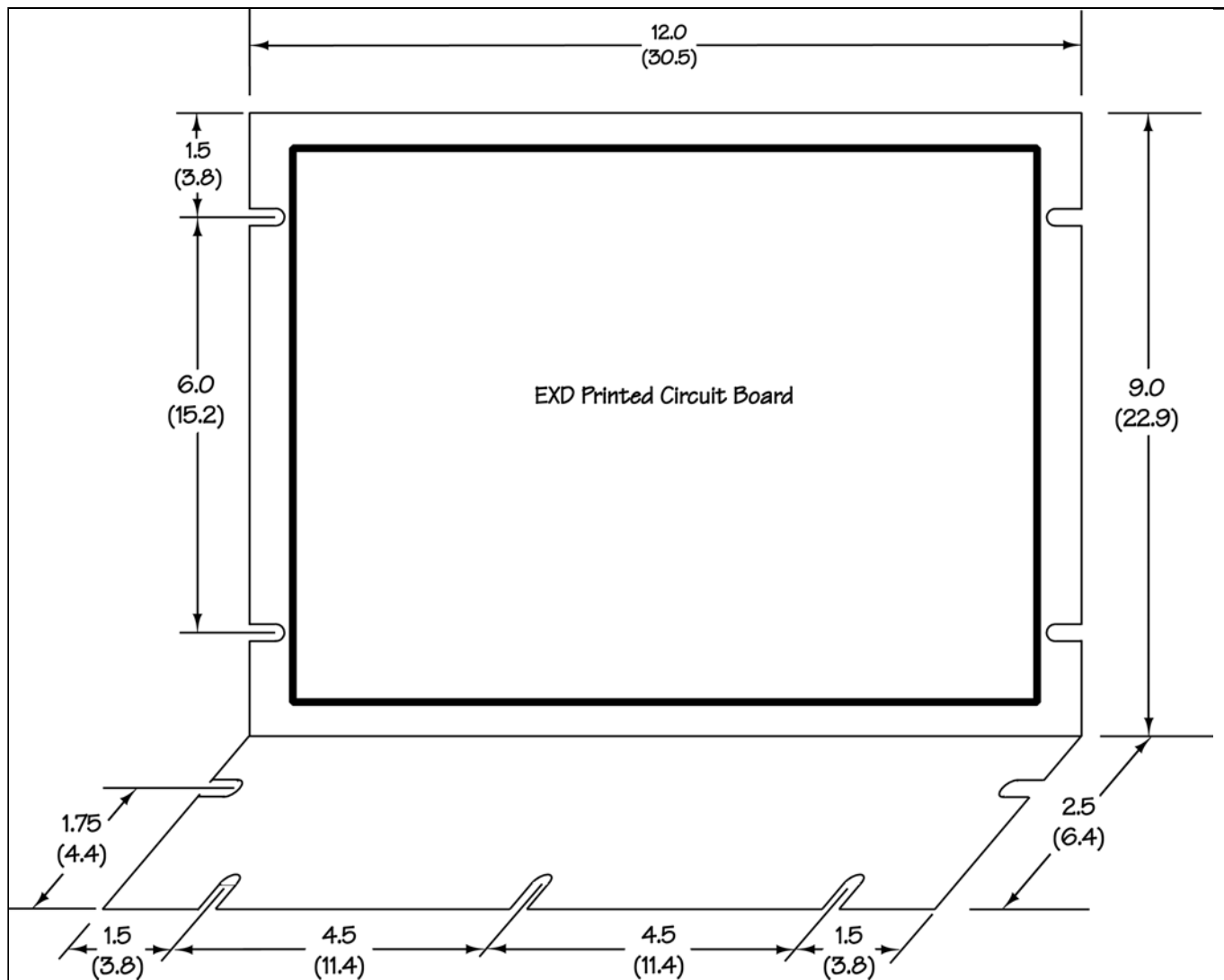
### **Standard Features**

- ▶ L-bracket design for cabinet mounting
- ▶ 0-10 V DC speed reference signal
- ▶ manual potentiometer inputs provided for fail-safe backup

### **Also Available**

- ▶ stand-alone enclosure for remote mounting

# Gravitrol<sup>®</sup> Line and Drive Speed Control Modules



*Bottom section of L-bracket is at 90° angle to printed circuit board mounting surface section. EXD printed circuit board detail omitted for clarity.*



**PROCESS CONTROL  
Corporation  
Headquarters**

6875 Mimms Drive, Atlanta, GA 30340 USA  
Tel: +1 770 449-8810 Fax: +1 770 449-5445

Plant for Europe

**PROCESS CONTROL GmbH**  
Industriestr. 15, 63633 Birstein, Germany  
Tel: +49 (0) 60 54 - 91 29 0 Fax: +49 (0) 60 54 - 91 29 99  
E-Mail: [info@ProcessControl-GmbH.de](mailto:info@ProcessControl-GmbH.de)  
Internet: [www.ProcessControl-GmbH.de](http://www.ProcessControl-GmbH.de)