

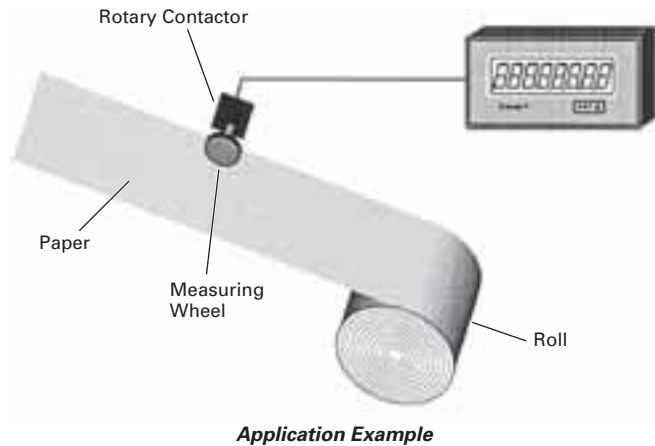
Product Family Overview

Introduction

Count controls are counters that provide output signal(s) at preset count value(s). Typical applications include cut-to-length, batching, filling, mixing and dispensing. Available from Eaton are a variety of count controls in different sizes, display types and feature sets.

Application Example

The illustration shows a simple cut-to-length application. The roll of paper is measured using a measuring wheel and rotary contactor (or encoder). Once the desired length is reached, an output signal may be directed to a shear for activation. Following the cut-off, the count control will reset to zero and begin measurement of the next piece. Options such as batch counting, where the number of cut pieces is counted, are also typical of this application.



Count Control Product Family Overview

Table 36. Product Family Overview

Product Family	Characteristics	Panel Cutout in Inches (mm)	Page Number
<p><i>E5-148-C</i></p>	<ul style="list-style-type: none"> <li>Low cost, simple count control</li> <li>Various power options: battery, AC, DC</li> <li>Easy-to-change preset values</li> <li>2-line display: input and preset values</li> </ul>	1.772 x 1.772 (45 x 45)	37
<p><i>Eclipse</i></p>	<ul style="list-style-type: none"> <li>6-digit, super bright LED display</li> <li>Multiple models available: totalizers, ratemeters, count controls, digital panel meters and flow controls</li> </ul>	1.772 x 1.622 (45 x 92)	41
<p><i>Ambassador</i></p>	<ul style="list-style-type: none"> <li>6-digit, high-visibility, 2-line LCD display</li> <li>User-configurable control inputs</li> <li>Highly flexible control/display</li> </ul>	2.667 x 2.667 (68 x 68)	43
<p><i>President</i></p>	<ul style="list-style-type: none"> <li>Bright LED display w/14 mm characters</li> <li>Simple configuration with 14-button tactile keypad</li> <li>Many different versions fit almost any application</li> </ul>	2.667 x 5.433 (68 x 138)	46
<p><i>Fusion</i></p>	<ul style="list-style-type: none"> <li>Integrated controller combines operator interface, ladder logic and high-speed counting</li> </ul>	2.667 x 5.433 (68 x 138)	79
<p><i>Electromechanical</i></p>	<ul style="list-style-type: none"> <li>Various price, voltage and size ranges for different duty cycles and environments</li> <li>Long life and always readable display</li> </ul>	Various Mounting Configurations	50



Cat. No. E5-148-C2421

### Features

- 2-Line LCD display
- Programmable as impulse counter, frequency meter or time meter with sign and zero blanking
- Power Supply: 90 – 260V AC or 10 – 30V DC
- Batch mode
- Display range -199.999 – 999.999 with zero blanking
- Easy to operate and set the preset values via 4 keys
- Relay or octocoupler-output
- Scaling factor 0.0001 – 9.9999
  - 1 preset value, 1 output
  - 2 preset values, 2 outputs

### Standards and Certifications

- cRU<sup>us</sup> Approval
- CE Marked

### Technical Data and Specifications

- Supply Voltage: 10 – 30V DC with reverse polarity protection; 90 – 260V AC max. 4 VA
- Display: 2-line LCD display, 6-digits
- Count Inputs: 2 count inputs, 4 input modes are programmable
- Polarity of the Inputs: Programmable for all inputs in common
- Input Resistance: Approx. 10 k $\Omega$
- Count Frequency: 10 kHz via DIP-switches reducible for INP A and INP B to 30 Hz (0.7 kHz at input mode E3 and E4 phase discriminator), automatic repeat at 900 Hz without losing counts (500 Hz for input mode E4)
- Min. Pulse Duration of the Inputs: 5 mS
- Input Sensitivity —
  - DC Supply Voltages
    - High:  $0.6 \times U_B - 30V$  DC
    - Low:  $0 - 0.2 \times U_B$  [VDC]
  - AC Supply Voltages
    - High: 12 – 30V DC
    - Low: 0 – 4V DC
- Pulse Shape: Variable (Schmitt-Trigger characteristics)
- Output 1: Relay —
  - With potential free contact, programmable as normally open or normally closed
  - Switching voltage max.: 250V AC/125V DC
  - Switching current max.: 3A
  - Switching current at DC min.: 30 mA
  - Switching power at DC: 90W
  - Switching power at AC max.: 750 VA
- OR
- NPN Optocoupler —
  - With open collector and emitter switching power 30V DC/15 mA
- Output 2: Relay —
  - With potential free contact, programmable as normally open or normally closed
  - Switching voltage max.: 250V AC/125V DC
  - Switching current max.: 3A
  - Switching current at DC min.: 30 mA
  - Switching power at DC: 90W
  - Switching power at AC max.: 750 VA
- OR
- NPN Optocoupler —
  - With open collector and emitter switching power 30V DC/15 mA
- Reaction Time of the Inputs —
  - Relay: Approx. 7 mS
  - Optocoupler: Approx. 1 mS
- Data Retention: Min. 10 years or  $1 \times 10^6$  memory cycles
- Transmitter Voltage: 24V DC -40%/±15%. 100 mA at 90 – 250V AC
  - With optional backlight —
    - 24V DC -40% ±15%. 60 mA at 90 – 260V AC
- Ambient Temperature: 32 to 122°F (0 to 50°C)
- Storage Temperature: -13 to 158°F (-25 to 70°C)
- EMC: According to EC EMC directive 89/36/EWG, EN 61 000-6-4/ EN 55011 Class B, EN 61 000-6-2
- Protection: IP65 (front)
- Weight: Approx. 8.47 oz (240 g), AC version with relay

1/16 DIN LCD Count Control

Product Selection

Table 38. Product Selection — 1/16 DIN LCD Count Control

Description	Catalog Number	*
<b>1 Preset LCD Count Control</b>		
90 – 260V AC Power 1.89 x 1.89 Inch (48 x 48 mm)	E5-148-C1421	
10 – 30V DC Power 1.89 x 1.89 Inch (48 x 48 mm)	E5-148-C1422	
<b>2 Preset LCD Count Control</b>		
90 – 260V AC Power 1.89 x 1.89 Inch (48 x 48 mm)	E5-148-C2421	
10 – 30V DC Power 1.89 x 1.89 Inch (48x 48 mm)	E5-148-C2422	

Dimensions

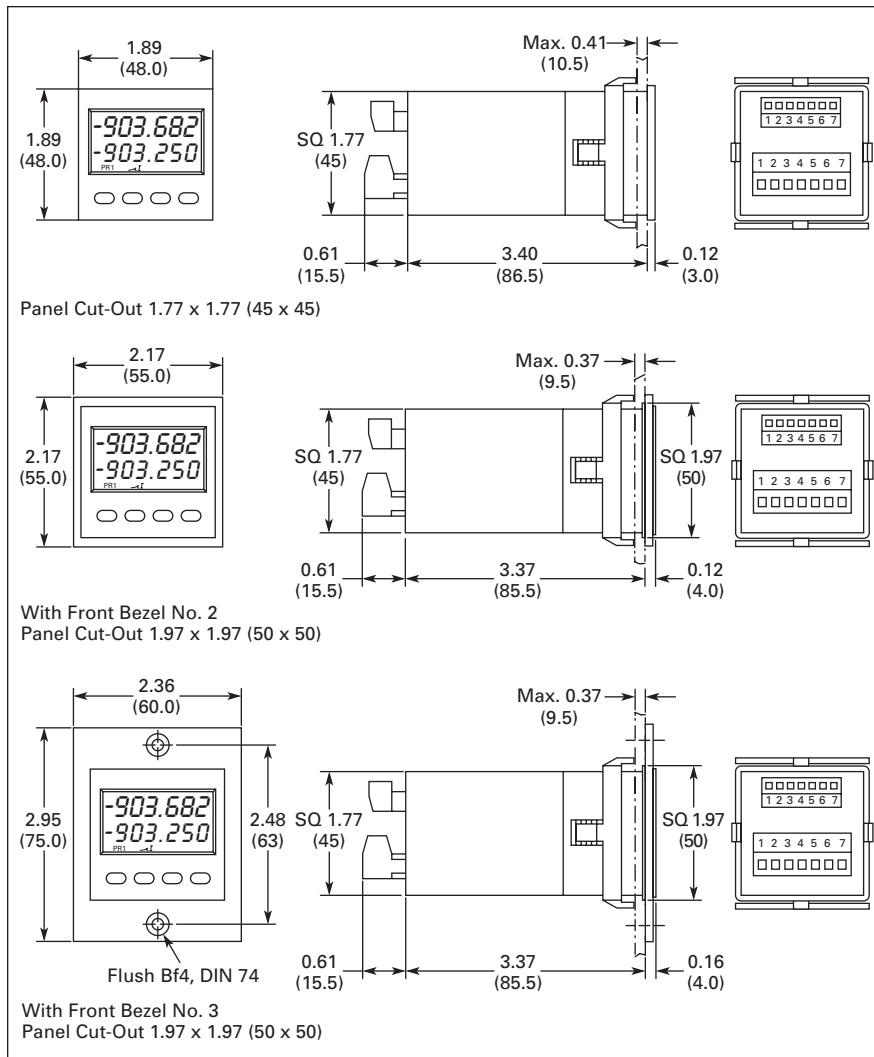


Figure 46. 1/16 DIN LCD Count Control — Approximate Dimensions in Inches (mm)