

Product Selection Guide

Count Controls/Preset Counters/Totalizers

	Characteristics	Panel Cutout in Inches (mm)	Page
E5-148-C 	Low cost, simple count control Battery operated Easy-to-change preset values Two-line display: input and preset values	1.772 x 1.772 (45 x 45)	V13-T1-52
E5-648-C 	Two-line display: counter, timer or tachometer AC or DC power options Wide choice of count modes for pulse inputs, time or frequency Two or four presets	1.772 x 1.772 (45 x 45)	V13-T1-54
Ambassador 	Six-digit, high-visibility, two-line LCD display User-configurable control inputs Highly flexible control/display	2.667 x 2.667 (68 x 68)	V13-T1-63
PD-Q and PD-ER 	Electromechanical pre-set counter Easy setpoint adjustment using pushbuttons Base mount or panel mount	2.72 x 1.59 (69 x 40.5) (panel mount model)	V13-T1-67
Fusion 	Integrated controller combines operator interface, ladder logic and high-speed counting	2.667 x 5.433 (68 x 138)	V13-T1-103

1 1/16 DIN LCD Preset Counters with Rate and Time

Product Description

AC or DC powered preset counters that can function as timer or tachometer/ratemeter.

Features

- Two-line display with green backlight (E5-648-C2421 and E5-648-C2422) or multi-color red/green LED backlighting (E5-648-C4461 and E5-648-C4462)
- Programmable as preset counter, batch counter or totalizer
- Power supply: 90–260 Vac or 10–30 Vdc
- Direct input of the presets via front keys or Teach-In input
- Relay outputs
- Scaling by multiplication and division factors 0.0001 to 99.999
 - Two preset values, two outputs
 - Four preset values, four outputs

Standards and Certifications

- cRU[®]us approval
- CE marked



Product Selection

E5-648-C_



1/16 DIN Two-Line LCD Count Control

Description	Catalog Number
Two Preset LCD Count Control with Backlighting	
90–260 Vac power 1.89 x 1.89 in (48 x 48 mm)	E5-648-C2421
10–30 Vdc power 1.89 x 1.89 in (48 x 48 mm)	E5-648-C2422
Four Preset LCD Count Control with Multi-Color Display	
90–260 Vac power 1.89 x 1.89 in (48 x 48 mm)	E5-648-C4461
10–30 Vdc power 1.89 x 1.89 in (48 x 48 mm)	E5-648-C4462 ①

Technical Data and Specifications

General Specifications

Description	Specification
Power supply	10–30 Vdc external fuse protection
	90–260 Vac max. 8 VA external fuse protection
Display	Two-line LCD display, six digits with programmable decimal point
Figure size	0.35 in (9 mm) high upper line
	0.28 in (7 mm) high lower line
Count inputs	Two count inputs (A and B), programmable for count/count direction, up/up, up/down, quadrature, quad2, quad4, A/B or (A-B)/A x 100%
Input polarity	Programmable for all inputs in common NPN/PNP
Input resistance	Approx. 5 Kohms
Count frequency	Max. 55 kHz with programmable filter for 30 Hz (see manual for details)
Input min. pulse duration	10 ms for control inputs/1 ms for reset input
Switching levels	
DC supply voltage	
High	0.6 x UB–30 Vdc
Low	0–0.2 x UB (Vdc)
AC supply voltage	
High	12–30 Vdc
Low	0–4 Vdc
Pulse shape	Variable (Schmitt-Trigger characteristics)

Note

① Not a stocked product, contact Eaton Care for assistance.

General Specifications, continued

Description	Specification
Output 1	
Relay	Programmable as normally open or normally closed
Switching voltage max.	250 Vac/110 Vdc
Switching current max.	3 A Vac/3 A Vdc
Switching current at DC min.	30 mA Vdc
Switching power at DC	90 W
Switching power at AC max.	750 VA
Output 2	
Relay	Relay with changeover/Form C contact
Switching voltage max.	250 Vac/110 Vdc
Switching current max.	3 A Vac/3 A Vdc
Switching current at DC min.	30 mA Vdc
Switching power at DC	90 W
Switching power at AC max.	750 VA
Reaction time of the outputs	Approximately 10 ms
Data retention	Min. 10 years or 1 million memory cycles
Sensor supply voltage	
AC powered unit	24 Vdc $\pm 15\%$, 80 mA
DC powered unit	Max. 80 mA, DC voltage is connected through
Ambient operating temperature	-4 to 149 °F (-20 to +65 °C)
Storage temperature	-13 to 167 °F (-25 to 75 °C)
EMC	
Emitted interference	EN 55011 Class B
Immunity to interference	EN 61000-6-2
Protection	IP65 (front)
Weight	Approx. 4.4 oz (125 g)

Dimensions

Approximate Dimensions in mm [Inches]

1/16 DIN Two-Line LCD Count Control

