FAT•N
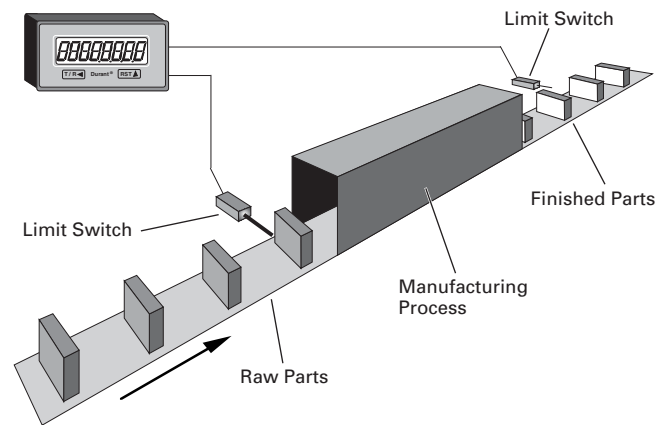
Product Family Overview

Introduction

Totalizers are used in a wide variety of applications where accurate totals are needed. Typical applications include counting the number of parts produced, amount of material used, or the number of machine cycles occurring. Totalizers are the simplest and most common type of counter. As an added bonus, some models can perform both totalizing and ratemeter functions.

Application Example

Parts are fed into a machine or process, an operation is performed, and the finished parts exit the machine or process. The subtract totalizer is used to indicate the number of parts in process.

Application Example

Totalizer Product Family Overview

Table 1. Product Family Overview

Product Family	Characteristics	Typical Applications	Panel Cutout in Inches (mm)	Page Number
E5-024-C	■ Non-replaceable battery (min. 8-yr. life) ■ Compact, low cost and high efficiency ■ 8-Digit LCD totalizers ■ Manual or electrical reset ■ Various counting modes/inputs	■ Replacement for mechanical counters ■ Transaction counting ■ Parts counting ■ Position indication or measurement	0.870 x 1.772 (22 x 44)	22
E5-_24-E	■ Compact device with bright, LED display ■ Multiple functions available: count, time, rate, multifunction, double-function ■ 24V DC Power	■ Count, measure, time where small package and easy-to-read display required ■ Position display ■ Motor/pulley RPM	0.870 x 1.772 (22 x 44)	24
E5-496-E	■ Economical, multifunction display ■ Large, LED characters ■ AC or DC power options	■ Large, easy-to-read display ■ Position display ■ Motor/pulley RPM	1.772 x 1.622 (45 x 92)	27
Courier	■ Replaceable lithium battery ■ 8-digit, high-visibility LCD display ■ Optional backlighting ■ Various input options available	■ Portable/mobile/remote flow monitoring (e.g. sewer pumping, pesticide application) ■ Position display, RPM ■ Length measurement (e.g. carpet, cable)	1.299 x 2.677 (33 x 68)	25
Eclipse	■ 6-digit, super bright LED display ■ Multiple models available: totalizers, ratemeters, count controls, digital panel meters and flow controls	■ Length measurement and control ■ Flow monitoring and control ■ Process monitoring and display ■ Voltage and current monitoring and display	1.772 x 1.622 (45 x 92)	28
Ambassador	■ 8-digit, high-visibility, 2-line LCD display ■ User-configurable control inputs ■ Highly flexible control/display	■ Flow control where simultaneous total and rate display are required ■ Cut-to-length and other simple processes where flexibility of inputs/outputs required	2.667 x 2.667 (68 x 68)	34
President	■ Bright LED display w/14 mm characters ■ Simple configuration with 14-button tactile keypad ■ Many different versions fit almost any application	■ Cut-to-length machinery with batching ■ Parts batching/palletizing ■ Die press positioning control ■ Applications where parameter changes are required	2.667 x 5.433 (68 x 138)	30
Electromechanical	■ Various price, voltage and size ranges for different duty cycles and environments ■ Long life and always readable display	■ Coin-operated equipment ■ Gaming machines ■ Printing presses ■ Secondary machines (e.g. punch press)	Various Mounting Configurations	16
Mechanical	■ Various size ranges for different duty cycles and environments ■ No power supply needed ■ Long life and always readable display	■ Winding and spooling equipment ■ Position display ■ Mechanical piece/cycle counting	Various Mounting Configurations	3

Cat. No. 57700470

Features

- 1/8 DIN Cutout
- NEMA 4X Front Panel
- Universal AC Power Supply (85 – 265V AC)
- DC Power Modules (9 – 30V DC)
- Removable Screw Terminals
- Short Depth: 3.6 inch (91 mm)
- Front Panel Programming

Standards and Certifications

- UL and cUL Listed, CE Marked

Technical Data and Specifications

Input Power
- AC Powered Models (57701-4XX) —
  - ❑ Input Power: 85 – 265V AC, 47 – 63 Hz, 20V A
  - ❑ External Fuse: 0.2A, 250V AC, Time Delay (T200 mA, 250V)
  - ❑ Isolation Dielectric Strength: 2300V AC
- DC Powered Models (57700-4XX)—
  - ❑ Input Power: 9 – 30V DC, 12 VA
  - ❑ External Fuse: 2.0A, 50V DC, Time Delay, (T2A, 50V)
  - ❑ Reverse Voltage Protection: Yes
  - ❑ Isolation Dielectric Strength: 2300V AC to signal inputs and relays, 500V AC to RS-485 and analog outputs

Human Interface
- Display: 5 digits
- Type: 0.56" high, seven segment, red LED
- Indicator: One red LED program/ calibration indicator
- Update Time: 0.1 to 99.9 seconds minimum

Data Retention
- Memory Type: EEPROM, no batteries required
- Duration: 100 years

Signal Input
- Rate/Process Time: Signal In
- Sensor Type: Sink or source, DIP switch selectable
- Input Impedance: 4.75 k ohms to +5V DC or 34.9 k Ohms to ground
- Thresholds —
  - ❑ High 3.5 to 28V DC
  - ❑ Low 0 to 1.9V DC, for single ended signals
- Magnetic Pickup Range: 200 mV p-p to 65 VRMS into 34.9 k Ohms
- Frequency Response: 200 Hz max. or 10 kHz max. (5V signals), DIP switch selectable

Program Enable Input
- Sensor Type: Sink only
- Input Impedance: 4.75 k Ohms to +5V DC
- Thresholds —
  - ❑ High 3.5 to 28V DC
  - ❑ Low 0 to 1.9V DC
- Response: 25 mS max. (5V signal)

Accessory Power Output
- Voltage: 12V DC ± 12%
- Current: 75 mA max.
- Protection: Short circuit protected

Optional Outputs
- Relay Board —
  - ❑ Number of relays: 2
  - ❑ Contact type: 1 set form C per relay
  - ❑ Contact rating: 5A, 250V AC or 30V DC
  - ❑ Isolation dielectric strength: 2300V AC
- Analog Retransmission —
  - ❑ Output signals: 4 – 20 mA (<750 Ω) and 0 – 10V (>2500 Ω)
  - ❑ Accuracy: 0.13% full scale and 100 PPM /°C (and 0.07% full scale change over 4 – 20 mA load ranges)
  - ❑ Isolation dielectric strength: 2300V AC to signal inputs, relays and AC power inputs; 500V AC to RS-485 and DC power inputs
- RS-485 Serial Communications —
  - ❑ Baud Rate: 1200, 2400, 4800, 9600, or 19,200, programmable
  - ❑ Parity: Even, odd or no parity
  - ❑ Address Range: 00 to 99 decimal
  - ❑ Protocol: Opto 22® compatible
  - ❑ Isolation Dielectric Strength: 2300V AC to signal inputs, relays and AC power inputs; 500V AC to analog outputs and DC power inputs
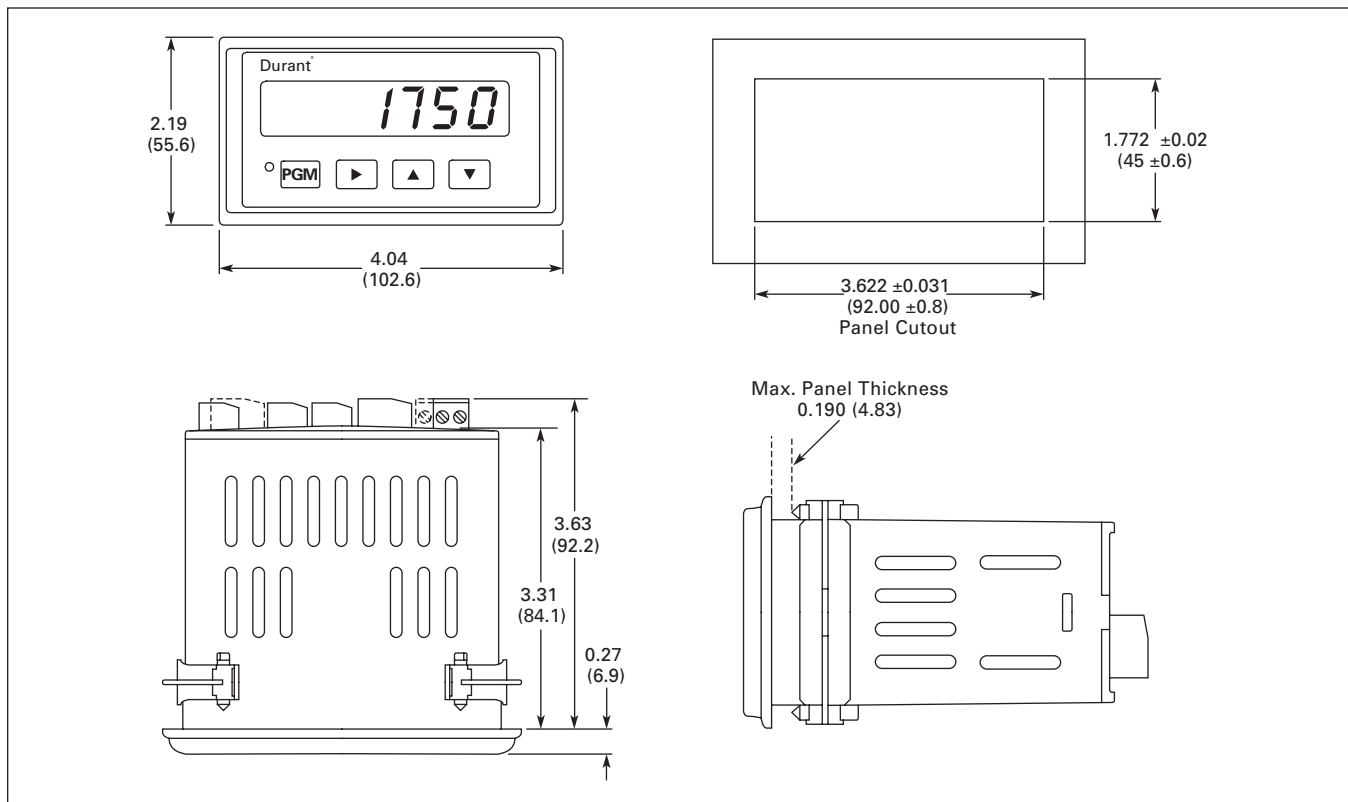
Environmental
- Operating Environment: Indoor use to 2000 meters
- Temperature —
  - ❑ Operating: 32 to 122°F (0 to 50°C)
  - ❑ Storage: -4 to 158°F (-20 to 70°C)
- Humidity: 0 to 85% RH, non-condensing
- Vibration: 2.5 Gs, 30 to 200 Hz
- Shock: 30 Gs, 11 mS half sinewave
- EMC —
  - ❑ Immunity to EN 50082-2 (Heavy Industrial)
  - ❑ Emissions to EN 50081-2 (Heavy Industrial)
- Front Panel: NEMA 4X when mounted with gasket provided
- CE EMC immunity and emissions requirements were met using shielded wiring on the RS-485, analog output and pulse input/ power lines. The shields were connected to earth ground at the Eclipse end of the shields.
- Pollution Degree 2: Overvoltage category II

Eclipse Series — Durant®

Product Selection

Table 57. Product Selection — Eclipse Series 5-digit LED Ratemeter

Description	Catalog Number	*
9 – 30V DC 9 – 30V DC, Alarms 9 – 30V DC, Analog Out 9 – 30V DC, Alarms, Analog Out	57700470 57700471 57700472 57700473	
9 – 30V DC, RS-485 9 – 30V DC, Alarms, RS-485 9 – 30V DC, Analog Out, RS-485 9 – 30V DC, Alarms, Analog Out, RS-485	57700474 57700475 57700476 57700477	
85 – 265V AC 85 – 265V AC, Alarms 85 – 265V AC, Analog Out 85 – 265V AC, Alarms, Analog Out	57701470 57701471 57701472 57701473	
85 – 265V AC, RS-485 85 – 265V AC, Alarms, RS-485 85 – 265V AC, Analog Out, RS-485 85 – 265V AC, Alarms, Analog Out, RS-485	57701474 57701475 57701476 57701477	

Dimensions

Figure 52. Eclipse Series Ratemeters — Approximate Dimensions in Inches (mm)

Discount Symbol **CC-1**