

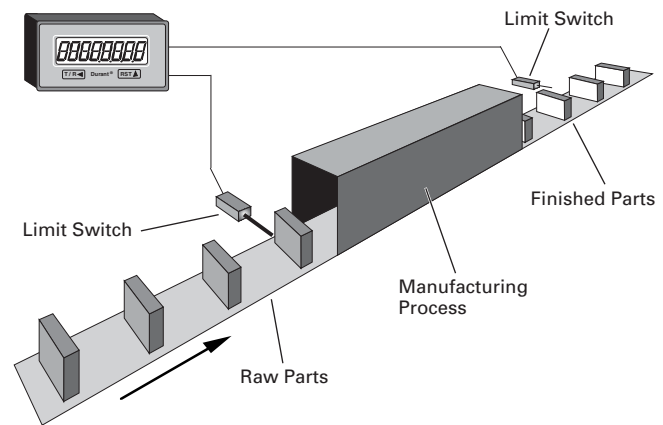
Product Family Overview

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
 <i>E5-024-C</i>	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Replacement for mechanical counters Transaction counting Parts counting Position indication or measurement 	0.870 x 1.772 (22 x 44)	22
 <i>E5-24-E</i>	<ul style="list-style-type: none"> Compact device with bright, LED display Multiple functions available: count, time, rate, multifunction, double-function 24V DC Power 	<ul style="list-style-type: none"> 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
 <i>E5-496-E</i>	<ul style="list-style-type: none"> Economical, multifunction display Large, LED characters AC or DC power options 	<ul style="list-style-type: none"> Large, easy-to-read display Position display Motor/pulley RPM 	1.772 x 1.622 (45 x 92)	27
 <i>Courier</i>	<ul style="list-style-type: none"> Replaceable lithium battery 8-digit, high-visibility LCD display Optional backlighting Various input options available 	<ul style="list-style-type: none"> 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
 <i>Eclipse</i>	<ul style="list-style-type: none"> 6-digit, super bright LED display Multiple models available: totalizers, ratemeters, count controls, digital panel meters and flow controls 	<ul style="list-style-type: none"> 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
 <i>Ambassador</i>	<ul style="list-style-type: none"> 8-digit, high-visibility, 2-line LCD display User-configurable control inputs Highly flexible control/display 	<ul style="list-style-type: none"> 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
 <i>President</i>	<ul style="list-style-type: none"> Bright LED display w/14 mm characters Simple configuration with 14-button tactile keypad Many different versions fit almost any application 	<ul style="list-style-type: none"> 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
 <i>Electromechanical</i>	<ul style="list-style-type: none"> Various price, voltage and size ranges for different duty cycles and environments Long life and always readable display 	<ul style="list-style-type: none"> Coin-operated equipment Gaming machines Printing presses Secondary machines (e.g. punch press) 	Various Mounting Configurations	16
 <i>Mechanical</i>	<ul style="list-style-type: none"> Various size ranges for different duty cycles and environments No power supply needed Long life and always readable display 	<ul style="list-style-type: none"> Winding and spooling equipment Position display Mechanical piece/cycle counting 	Various Mounting Configurations	3

Eclipse Series — Durant®



Cat. No. 57700400

Features

- 4 Full digits
- 1/8 DIN Size
- Red, LED display
- 0.56" (14 mm) high characters
- Scalable display
- Flashing alarms
- Maximum/minimum data hold
- Optional analog, relay and RS-485 outputs
- NEMA 4X
- Depluggable terminal blocks

Standards and Certifications

- UL and cUL Listed, CE Marked

Technical Data and Specifications

Input Power

- AC Powered Models (57751-4XX)
 - Input Power: 85 – 265V AC, 47 – 63 Hz, 20 VA
 - External Fuse: 0.2A, 250V AC, Time Delay (T200mA, 250V)
 - Isolation Dielectric Strength: 2300V AC
- DC Powered Models (57750-4XX)
 - 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: ± 4 full digits
- Type: 0.56" (14 mm) high, seven segment, red LED
- Update Time: 0.4 seconds
- Alarm: Flashing display
- Indicator: One red LED program/calibration indicator with max./min. capture and hold

Data Retention

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

Signal Input

- DC Voltage Models (5770X-40X) —
 - Range: ± 199.9 mV DC, ± 1.999 V DC, ± 19.99 V DC, ± 199.9 V DC, DIP Switch Selectable
 - Impedance: 1 M Ω (ohms)
 - Overrange: 750V DC/530V AC except 220V DC/AC on 199.9 mV range
 - Accuracy: $\pm 0.1\%$ of reading, $\pm 0.03\%$ FS, ± 0.5 digit, and ± 80 PPM/ $^{\circ}$ C
- AC Voltage Models (5770X-41X) —
 - Range: 199.9 mV AC, 1.999V AC, 19.99V AC, 199.9V AC, DIP Switch Selectable, all ranges true RMS
 - Frequency: 40 to 1000 Hz
 - Impedance: 1 M Ω (capacity coupled)
 - Overrange: 750V DC/530V AC except 220V DC/AC on 199.9 mV range
 - Accuracy: $\pm 0.5\%$ of reading, $\pm 0.13\%$ FS, ± 0.5 digit, ± 180 PPM/ $^{\circ}$ C for crest factor = 1; plus $\pm 0.7\%$ for crest factor = 1 to 3; and $\pm 2.5\%$ for crest factor = 5
- DC Current Models (5770X-42X) —
 - Range: ± 199.9 μ A DC, ± 1.999 mA DC, ± 19.99 mA DC, ± 199.9 mA DC, DIP Switch Selectable
 - Impedance: 199.9 mV/selected range
 - Overrange: 30 mA (1 99.9 μ A range), 100 mA (1.999 mA range), 300 mA (19.99 mA range), 1 A (199.9 mA range)
 - Accuracy: $\pm 0.1\%$ of reading, $\pm 0.03\%$ FS, ± 0.5 digit, and ± 120 PPM/ $^{\circ}$ C
- AC Current Models (5770X-43X)
 - Range: 199.9 μ A AC, 1.999 mA AC, 19.99 mA AC, 199.9 mA AC, DIP Switch Selectable, all ranges true RMS
 - Frequency: 40 to 1000 Hz
 - Impedance: 199.9 mV/selected range (shunt output capacitive coupled)
 - Overrange: 30 mA (11 99.9 μ A range), 100 mA (1.999 mA range), 300 mA (19.99 mA range), 1A (199.9 mA range)

- Accuracy: $\pm 0.5\%$ of reading, $\pm 0.13\%$ FS, ± 0.5 digit, and ± 200 PPM/ $^{\circ}$ C for crest factor = 1; plus $\pm 0.7\%$ for crest factor = 1 to 3; and $\pm 2.5\%$ for crest factor = 5

■ 5A AC Models (5770X-44X) —

- Range: 5A AC, true RMS
- Frequency: 40 to 1000 Hz
- Impedance: 0.02 ohms (shunt output capacitive coupled)
- Overrange: 10A Maximum
- Accuracy: $\pm 0.4\%$ of reading, $\pm 0.13\%$ FS, ± 0.5 digit, and ± 200 PPM/ $^{\circ}$ C for crest factor = 1; plus $\pm 0.7\%$ for crest factor = 1 to 3; and $\pm 2.5\%$ for crest factor = 5

■ Process Models (5770X-45X) —

- Range: 4 – 20 mA DC, 0 – 10V DC, 1 – 5V DC; separate input terminals for voltage and current signals
- Impedance: 100 Ω (current input) and 1.27 M Ω (voltage input)
- Overrange: 50 mA maximum (current input) and 100V maximum (voltage input)
- Power Output: 24V DC $\pm 10\%$, 90 mA max, short circuit protected
- Accuracy: $\pm 0.1\%$ of reading, $\pm 0.03\%$ FS, ± 0.5 digit, and ± 80 PPM/ $^{\circ}$ C

Optional Outputs

- Relay Board —
 - Dual relay: 1 set of form C contacts each
 - Contact rating; 5A, 250V AC or 30V DC
 - Isolation dielectric strength: 2300V AC
- Analog Retransmission —
 - Output Signals: 4 – 20 mA ($< 750 \Omega$) and 0 – 10V ($> 2500 \Omega$)
 - Accuracy: 0.13% FS, 100 PPM/ $^{\circ}$ C, 0.07% FS change with 4 – 20 mA load, $\pm 0.3\%$ FS for 4 – 20 mA output, only after exposure to 85% relative humidity
 - Isolation dielectric strength: 2300V AC to signal inputs, relays and AC power input; 500V AC to RS-485 and DC power inputs

Eclipse Series — Durant®

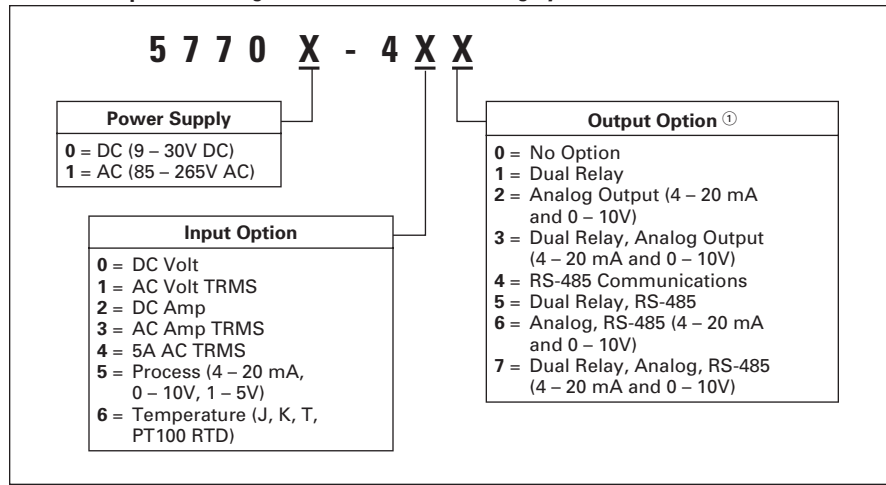
- RS-485 Serial Communication —
 - Baud Rate: 1200, 2400, 4800, 9600 or 19,200, programmable
 - Parity: Even, odd or no parity
 - Address Range: 00 to 99 decimal
 - Protocol: Opto 22® compatible
 - Isolation Dielectric Strength: 2300V AC to signal inputs, relays, and AC power input; 500V AC to analog outputs and DC power inputs

Environmental

- Operating Env.: 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/EMI: Per EN 61326-1 Industrial
- Front Panel: NEMA 4X when mounted with gasket provided
- Agency Approval:
 - CE EMC immunity and emissions requirements were met using shielded wiring on the RS-485, analog output and signal input lines. The shields were connected to earth ground at the Eclipse end of the shields.
 - Conducted emissions requirements were met assuming that the AC signal input would not be connected directly to the AC Mains.
 - The measurement error during RF immunity testing was less than ±5% of full scale. In addition, models with an AC signal input had measurement error of less than +25% of full scale during RF immunity testing of the RS-485 at frequencies below 1 MHz.
- Pollution Deg. 2: Overvoltage Category II

Catalog Number Selection

Table 61. Eclipse Series Digital Panel Meters Numbering System



① Output Options 0, 2, 4 are not available for models -41X and -43X.

Dimensions

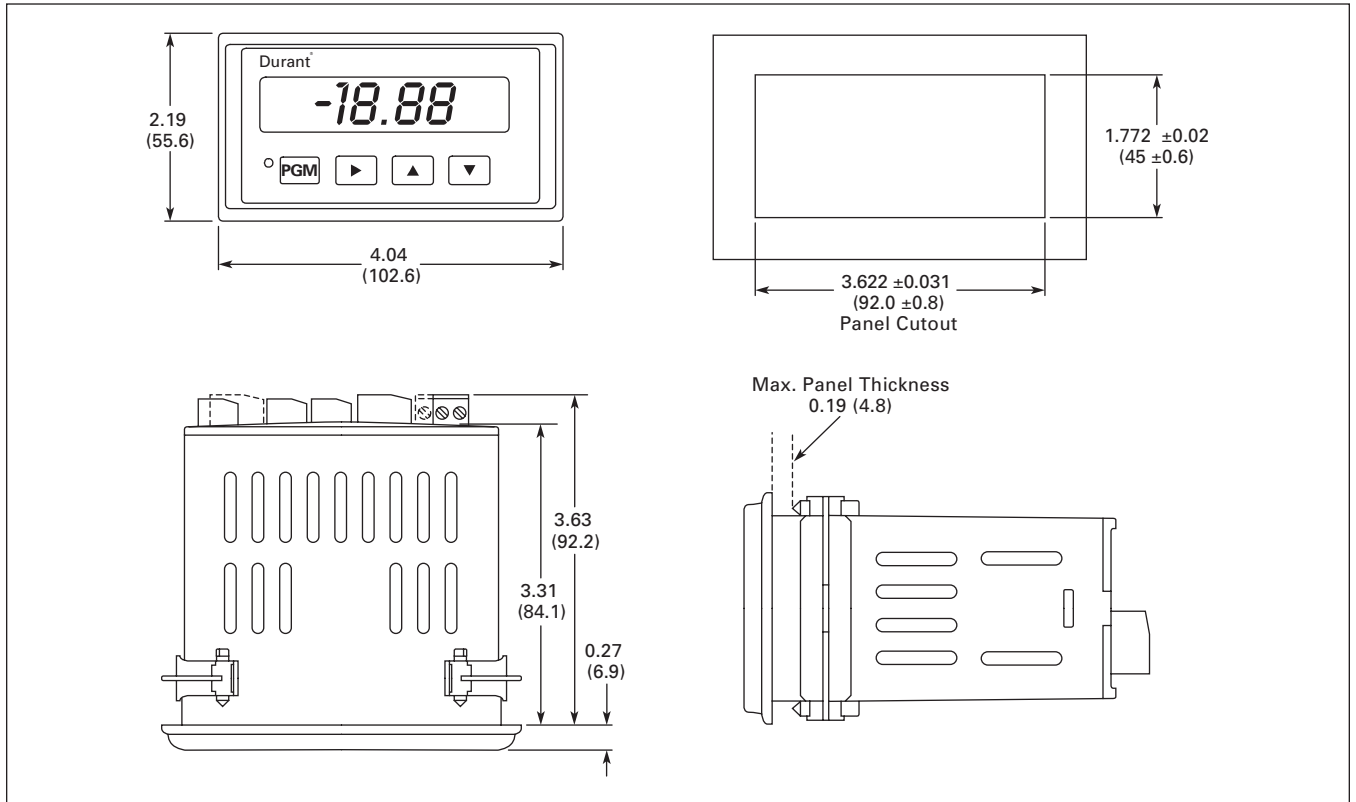


Figure 55. Eclipse Series Digital Panel Meters — Approximate Dimensions in Inches (mm)