

**Features and Benefits**



Cat. No. 57550400

**Features**

- User-configurable operator interface with back-lit LCD display and 18-button tactile feedback keypad
- High speed counter with 5 presets and prewarn, totalizer, batch counter and ratemeter
- 10 parameter sets
- 13 digital inputs
- (2) 4 – 20 mA inputs
- (2) 0 – 10V input
- (3) Form C, 2 Form A, 2 NPN transistor, (1) 4 – 20 mA, & (1) 0 – 10V outputs
- RS-232 and RS-485 serial communications
- 100-line ladder logic processor for ultimate flexibility
- Configuration software included
- NEMA 4X enclosure

**Product Description**

The Fusion Integrated Machine Control has advanced features, including a five-preset high speed counter with prewarn, a totalizer with preset, a batch counter with preset and a rate-meter with high and low setpoints. Unique to the count control world, the Fusion has five output relays (rather than two), along with two transistors and two analog setpoint or follower outputs. Its ten available parameter sets of pre-loaded values are useful as recipes, for job-stacking or for a variety of application-specific purposes.

The Fusion has a multi-line alphanumeric display which can be programmed to show text messages, logic-generated prompts, alarms and machine status. Up to eight screens can be shown or optionally locked out. Count and time presets can be made view-only or editable. Preset entry is achieved with simple 0-9 keys on the front panel rather than complicated scrolling methods. The Fusion's real time clock/calendar may be displayed and/or used to time and date stamp printouts.

With its ladder logic, the Fusion is actually a 26 I/O controller, making it a complete control for many machines and processes, integrating the functions of external timers, pushbuttons, power supplies, indicating lights, control relays and other components in the same box.

**Table 75. Features and Benefits**

Feature	Customer Benefit
High speed count functions; including scaling, main counter, five presets, prewarn, totalizer, batch and rate	"Canned" count functions offer flexibility and ease of setup in the desired units of measure.
High speed counting independent of ladder scan time	Precise and repeatable output response for high performance applications.
Flexible display with selectable character sizes (large, medium, small), run screens and ladder triggered messages.	Minimizes confusion and operator errors as information can be tailored to what they need and in their language. Maintenance/management data can be separated. Different character sizes allow optimization of information displayed. Machine status information can be displayed allowing operators to take action.
Simple front panel layout and keypad. Four soft keys & six function keys can be used as inputs.	Ease of use for operator. Numeric keypad allows for ease of preset and machine parameter entry. Function keys and soft keys allow easy and quick access to information and/or parameters needed by the operator and don't require using additional inputs. Eliminates cost associated with external pushbuttons and inputs.
Parameter sets	Allows for predefined recipes/jobs to be preloaded for the operator. Simplifies operator interaction and minimizes errors.
Programmable relay logic	Well understood programming method that allows flexibility in control functionality. Easy to tailor the control to various applications.
26 I/O (digital & analog)	Provides application flexibility. Analog inputs allow monitoring key process parameters. Analog outputs allow interfacing to drives and other control products.
Integrated solution	Reduced overall control costs, installation and commissioning. More flexible and capable than traditional count/control solutions but less complex than many PLC solutions.
Windows® and front panel programming	Ease of programming and configuration control.
RS-232 and RS-485 serial communication ports	Allow for direct connection to PC for programming, connection to Modbus® networks, interface to serial printer.
Robust type 4X package. DIN cutout and short depth 2.82 Inches (71.6 mm).	Suited for wet applications. Same cutout as the President Series — easing the migration. Short depth minimizes the cost and size of the machine panel or control enclosure.
Input power: 85 – 265V AC 50/60 Hz or 10 – 30V DC models	Greatly reduces models required for different control voltages.
Output power: 12V DC @75 mA, 24V DC @100 mA	Eliminates the need for an external power supply for encoders, analog transducers, etc.
Depluggable screw terminals	Allows for ease of wiring and removal of control. Terminals are different sizes to error-proof installation.
Non-volatile memory and capacitor backed real time clock	Don't have to worry about a battery failing down the road.
Real time clock	Allows for control functions to be performed on day/time and allows for date/time stamping on printouts.
UL, cUL and CE Marked	Ease of meeting machine agency requirements and robust EMC performance.

## Technical Data and Specifications

## Standards and Certifications

- UL and cUL Listed; CE Marked

## Technical Data and Specifications

## Environmental

- Operation: Indoor use to 2000m
- Temperature:
  - 32 to 122°F (0 to 50°C) operating
  - -4 to 158°F (-20 to 70°C) storage
- Humidity: 0 to 85% RH, non-condensing
- Vibration: 2.5 Gs, 30 – 200 Hz
- Shock: 30 Gs, 11 mS half sine wave
- EMC:
  - EN61326:1997
  - All I/O lines except RS-485 <30m
- Front Panel:
  - Type 4X indoor use only, when mounted with gasket provided
- Safety: UL and cUL Listed, CE Compliant

## Input Power

- AC Model: 85 – 265V AC, 47 – 63 Hz, 20 VA; Isolation 2300V AC
- DC Model: 10 – 30V DC, 15 VA

## Inputs

- Control:
  - Number: 10
  - Impedance: 4.75k Ohms to +5V DC
  - Thresholds:
    - High 3.5 – 30V DC
    - Low 0 – 1.0V DC
- Counter:
  - Number: 3 (including reset)
  - Impedance: 4.75k Ohms to +5V DC or 26.9k Ohms to ground
  - Thresholds:
    - High 3.5 – 30V
    - Low 0 – 1.5V, or 200 mV p-p to 50V rms @ 26.9k Ohms (mag pickup)

- Response:
  - 140 Hz or 14 kHz for sinking, push-pull or mag pickup inputs
  - 60 Hz or 6 kHz for sourcing only inputs
  - All frequencies based on 50-50 duty cycle
  - 6 kHz maximum sustained count speed

## ■ Analog:

- Number: 4
- Type: 4 – 20 mA and two 0 – 10V DC
- Accuracy: ± 0.5% FS and ± 200 PPM/°C
- Impedance: 100 Ohms (current input), 1.27M Ohms (voltage input)
- Overrange: 45 mA max. (current input), 20V max. (voltage input)

## Outputs

- Power (AC input model only):
  - 24V DC ± 15%, 100 mA max., short circuit protected
  - 12V DC ± 10%, 75 mA max., short circuit protected
- Relays:
  - Number: 3 (Form C), 2 (Form A)
  - Contacts: 5A, 250V AC, 30V DC
  - Isolation: 2300V AC
- Transistors:
  - Number: 2
  - Type: NPN Darlington
  - Ratings: 150 mA max. ON current, 30V DC max. OFF voltage
- Analog:
  - Number: 2, short circuit protected
  - Type: 4 – 20 mA (<450 Ohms), 0 – 10V (>2500 Ohms)
  - Accuracy: ± 0.5% FS and ± 200 PPM/°C
  - Common Mode Voltage Rating: 250V AC
  - Isolation: 2300V AC

## ■ RS-232:

- Connector: DB-9S
- Polarity: DCE
- Baud Rate: 1200 – 19200

## ■ RS-485:

- Connector: 6 wire RJ-12 phonejack
- Baud Rate: 1200 – 19200

## Data Retention

- Program Data:
  - Type: Non-volatile
  - Duration: 100 Years, no batteries
- Real Time Clock:
  - Type: Capacitor
  - Charge Time: 3 Minutes
  - Retention: 1 – 5 Days

## Human Interface

- Display:
  - Type: 128 x 64 pixel graphic LCD with LED backlight
  - Character Size:
    - 0.12" (3 mm) high, 21 characters per line, 6 lines maximum
    - 0.24" (6 mm) high, 10 characters per line, 3 lines maximum
    - 0.35" (9 mm) high, 7 characters per line, 2 lines maximum
- Keys:
  - Number: 18
  - Type: membrane switches with tactile feedback
- Real Time Clock Format: Seconds, minutes, hours, day and date

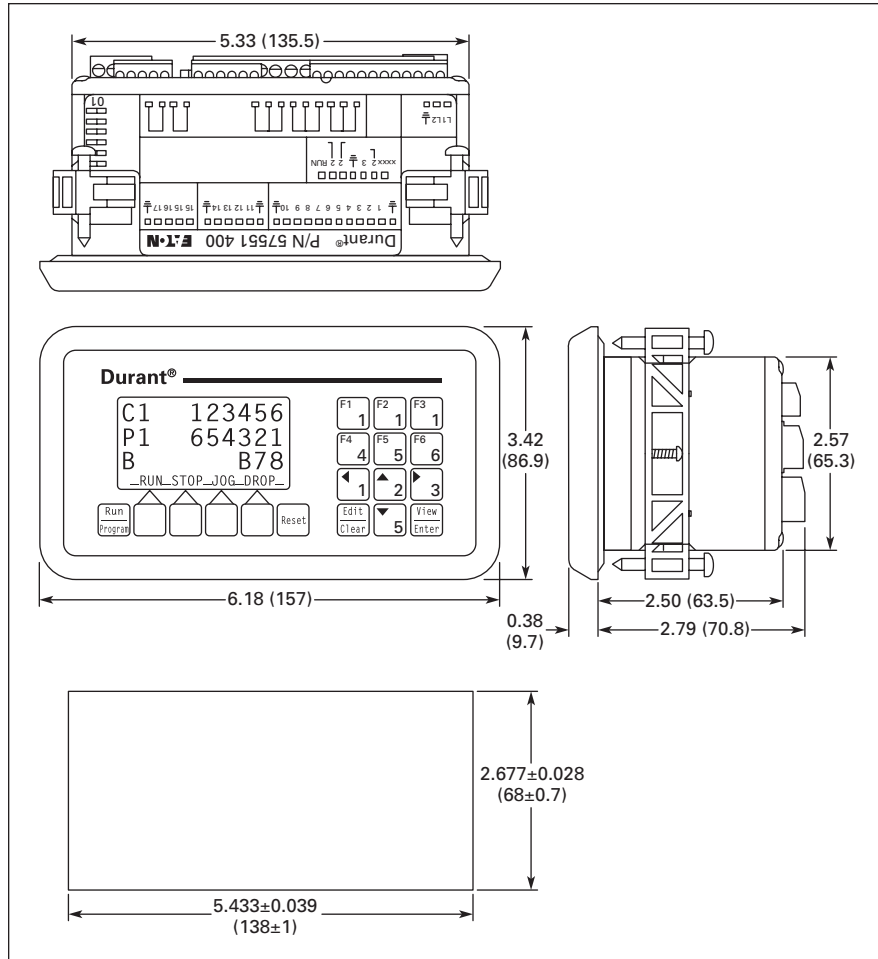
**Product Selection**

**Product Selection**

**Table 76. Product Selection — Fusion Integrated Machine Control**

Description	Catalog Number	*
Fusion Integrated Machine Control — 10 – 30V DC Power	<b>57550400</b>	
Fusion Integrated Machine Control — 85 – 265V AC Power	<b>57551400</b>	
Fusion Configuration Software	<b>57590400</b>	

**Dimensions**



**Figure 69. Fusion Integrated Machine Control — Approximate Dimensions in Inches (mm)**

**Note:** Recommended Panel Cutout is 0.375 Inch (9.5 mm) max. panel thickness.