Fusion Integrated Machine Control

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Product Description

The Fusion® Integrated Machine Control has advanced features, including a five-preset high speed counter with pre-warn, a totalizer with preset, a batch counter with preset and a ratemeter 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.

Features

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

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Features and Benefits

Feature	Customer Benefit
High speed count functions; including scaling, main counter, five presets, pre-warn, 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 and 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 and 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 in (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: 85–265 Vac 50/60 Hz or 10–30 Vdc models	Greatly reduces models required for different control voltages.
Output power: 12 Vdc at 75 mA, 24 Vdc at 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.

Standards and Certifications

- UL and cUL listed
- CE marked

Product Selection

57550400

Fusion Integrated Machine Control

Description	Catalog Number
Fusion integrated machine control—10–30 Vdc power	**57550400**
Fusion integrated machine control—85–265 Vac power	**57551400**
Fusion configuration software	**57590400**

Technical Data and Specifications

General Specifications

| Description	Specification
Environmental	
Operation	Indoor use to 2000 m
Temperature	32 to 122 °F (0 to 50 °C) operating
	−4 to 158 °F (−20 to 70 °C) storage
Humidity	0 to 85% RH, noncondensing
Vibration	2.5 Gs, 30–200 Hz
Shock	30 Gs, 11 ms half sinewave
EMC	EN61326:1997
	All I/O lines except RS-485 <30 m
Front panel	Type 4X indoor use only, when mounted with gasket provided
Safety	UL and cUL listed, CE compliant
Input Power	
AC model	85–265 Vac, 47–63 Hz, 20 VA; isolation 2300 Vac
DC model	10–30 Vdc, 15 VA
Inputs	
Control	
Number	10
Impedance	4.75 Kohms to +5 Vdc
Thresholds	
High	3.5–30 Vdc
Low	0–1.0 Vdc
Counter	
Number	Three (including reset)
Impedance	4.75 Kohms to +5 Vdc or 26.9 Kohms to ground
Thresholds	
High	3.5–30V
Low	0–1.5V, or 200 mV p-p to 50V rms at 26.9 Kohms (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 0–10 Vdc
Accuracy	±0.5% FS and ±200 PPM/°C
Impedance	100 ohms (current input), 1.27 Mohms (voltage input)
Overrange	45 mA max. (current input), 20 V max. (voltage input)

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General Specifications, continued

Description	Specification
Outputs	
Power (AC input model only)	24 Vdc ±15%, 100 mA max., short-circuit protected
	12 Vdc ±10%, 75 mA max., short-circuit protected
Relays	
Number	3 (Form C), 2 (Form A)
Contacts	5 A, 250 Vac, 30 Vdc
Isolation	2300 Vac
Transistors	
Number	2
Type	NPN Darlington
Ratings	150 mA max. ON current, 30 Vdc max. OFF voltage
Analog	
Number	2, short-circuit protected
Type	4–20 mA (<450 ohms), 0–10 V (>2500 ohms)
Accuracy	±0.5% FS and ±200 PPM/°C
Common mode voltage rating	250 Vac
Isolation	2300 Vac
RS-232	
Connector	DB-9S
Polarity	DCE
Baud rate	1200–19200
RS-485	
Connector	Six-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	Three minutes
Retention	1–5 days
Human Interface	
Display	
Type	128 x 64 pixel graphic LCD with LED backlight
Figure size	0.12 in (3 mm) high, 21 characters per line, 6 lines maximum
	0.24 in (6 mm) high, 10 characters per line, 3 lines maximum
	0.35 in (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

Dimensions

Approximate Dimensions in Inches (mm)

Fusion Integrated Machine Control [1]
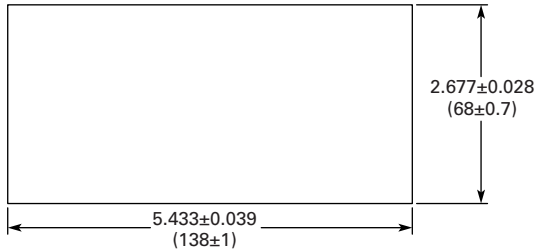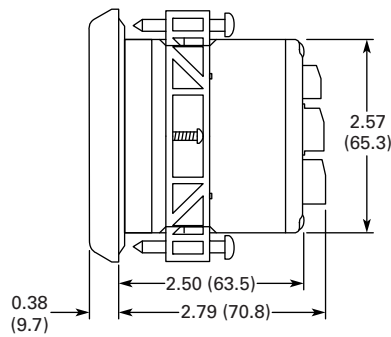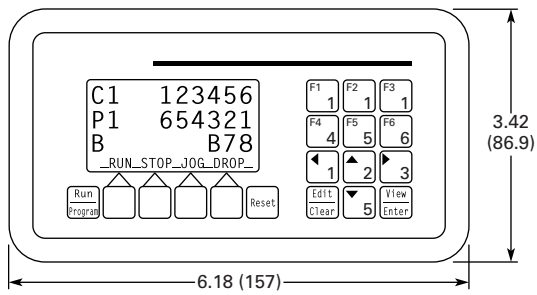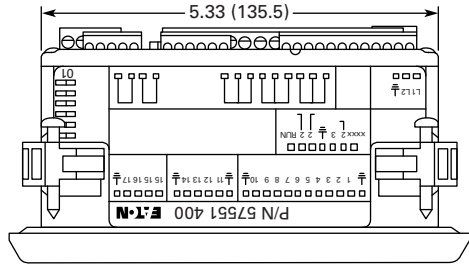
Note

[1] Recommended panel cutout is 0.375 in (9.5 mm) max. panel thickness.