

ECLIPSE

S E R I E S



1/8 DIN cutout

Front panel programming

Nema 4 front panel

Short depth

Simultaneous calibration

Removable connectors

D·I·G·I·T·A·L P·A·N·E·L M·E·T·E·R·S

C·O·U·N·T·E·R·S

R·A·T·E·M·E·T·E·R·S

T·E·M·P·E·R·A·T·U·R·E M·E·T·E·R·S

Eclipse



Superior Performance Since 1957

Acorn Industrial Products Co • 520 Hertzog Boulevard • King of Prussia, PA 19406

Phone: 800-523-5474 • Fax: 800-782-6780

Email: acorn@acornindprod.com • Website: www.acornindprod.com

It started with a single line of mechanical counters. Today, with more than a century of commitment to innovation, and an eye on the changing face of technology and industry, Durant is the premier manufacturer of count/process control products.

From standard products to customized solutions; mechanical or electronic; from design through delivery, installation and service after the sale, we put our wealth of experience and leadership behind our products for our customers. And with product innovations like our new **Eclipse Series**, we are helping you meet and exceed the demanding requirements of today's process applications.

The Eclipse Series

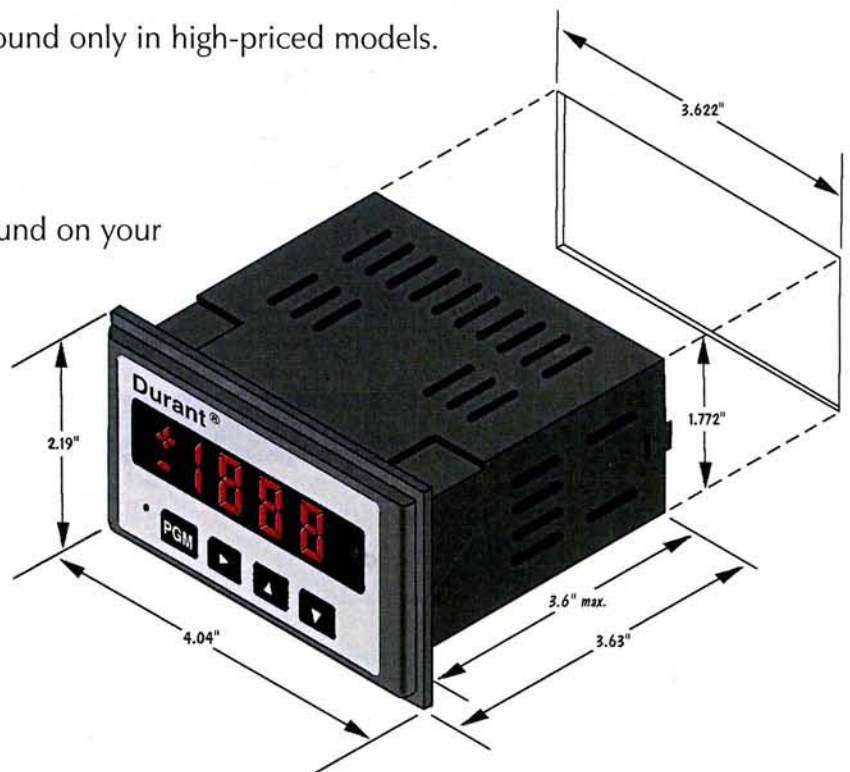
You can have it all.

It has been said that if you want something good, fast and affordable, you should pick the two that are most critical to your needs, because you can't have all three. We beg to differ. And we offer our new Eclipse Series as proof.

The New Eclipse Series of 1/8 DIN process controls offers an unmatched list of features, including those previously found only in high-priced models.

That's good.

Add to that guaranteed quick turnaround on your order. **That's fast.** Then consider that the Eclipse Series offers this high-quality, extremely flexible product at a reasonable price. **That's affordable.**



See? You CAN have it all!

Part Specifications

ECLIPSE S E R I E S

SPECIFY THE PART YOU NEED

Easy as 1, 2, 3.

5 7 7 0 X - 4 X X

POWER SUPPLY

0 = DC (9-30 VDC)
1 = AC (85-276 VAC)

- 1) Fill in the number for the desired **power input**.
- 2) Fill in the number for the desired **signal input**.
- 3) Fill in the number for any desired **option combination**.

INPUT OPTION

0 = DC Volt
1 = AC Vp;t TRMS
2 = DC Amp
3 = AC Amp TRMS
4 = 5A AC TRMS
5 = Process (4-20mA, 0-10V, 1-5V)
6 = Temperature (J, K, T, Pt100 RTD)
7 = Rate
8 = Count

OUTPUT OPTION

0 = No Option
1 = Dual Relay
2 = Analog (4-20mA & 0-10V)
3 = Dual Relay, Analog (4-20mA & 0-10V)
4 = RS485
6 = Analog (4-20mA & 0-10V), RS485
7 = Dual Relay, Analog (4-20mA & 0-10V), RS485

ECLIPSE SERIES

Unmatched Features

- 1/8 DIN Cutout
- NEMA 4 Front Panel
- Universal AC Power Supply (85-265 VAC)
- DC Power Models (9-30 VDC)
- Removable Screw Terminals
- Short Depth (3.6")
- Front Panel Programming and Calibration



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Specifications

ENVIRONMENTAL

Temperature: Operating: 0 to 50C
Storage: -20 to 70C

Humidity: 0 to 85% RH, non-condensing

Vibration: 2.5Gs, 30 to 200 Hz

Shock: 50Gs, 11 ms half sine wave

EMC/EMI: Immunity to EN50082-2
Emissions to EN50081-2

Front Panel: NEMA 4X when mounted w/gasket provided

Safety: Designed to meet UL, cUL, CE

MECHANICAL

Cutout: 3.62"W x 1.77"H (92mmx45mm) DIN Standard

Outline: 4.04"W x 2.19"H x 3.87"D (103mmx56mmx98mm)
3.60" (92mm) depth from back of front bezel

Enclosure: All plastic construction with polyester front label
Panel mounting with 2 plastic mounting clips (4 screws)

Connectors: Up to 6 Phoenix pluggable terminal blocks

INPUT POWER

AC Model: 85-265VAC, 47-63 Hz, 20VA
External fuse requirements: 0.2A, 250VAC, Time-delay

DC Model: 9-30VDC, 12VA
External fuse requirements: 2.0A, 50VDC, Time-delay
Reverse voltage protected

OPTIONAL OUTPUTS

Relays: Number: 2
Type: 1 Form C
Contact Rating: 5A, 250VAC, 30VDC

Analog: Number: 1
Type: 4-20mA (<750 Ohms) and 0-10V (>2500 Ohms)
Accuracy: 0.13% FS and 100 PPM/C (0.07% FS change with 4-20mA load)

RS-485: 1200 to 19200 Baud rates
Even, odd and no parity
00 to 99 address range
Based on Opto 22™ OptoMUX

DATA RETENTION

Program, calibration and count data is stored in EEPROM memory devices which have 100-year data retention with no batteries.

HUMAN INTERFACE

Display: ± 3.5 to 6 digits
.56" high, 7-segment characters
High-efficiency red LEDs

Indicator: 1 high-efficiency red LED program/calibration indicator

Keys: 4 behind-membrane, high-force tactile feedback switches

AVAILABLE INPUT FUNCTIONS

DC Voltage: ± 199.9 mVDC, ± 1.999 VDC, ± 19.99 VDC, ± 199.9 VDC
Accuracy: $\pm 0.1\%$ of reading, ± 1 digit and ± 80 PPM/C
Impedance: 1M Ohms
Overrange: 750VDC/530VAC except 220VDC/AC on 199.9mV range
DIP switch selectable input range and program enable
 ± 3.5 -digit display updated every 0.4 seconds

AC Voltage: 199.9mVAC, 1.999VAC, 19.99VAC, 199.9VAC (All ranges True RMS)
Accuracy: $\pm 0.5\%$ of reading, ± 3 digits and ± 180 PPM/C (Crest factor=1)
plus $\pm 0.7\%$ for Crest factor=1-3 and $\pm 2.5\%$ for Crest factor=5
Frequency range: 40 to 1000 Hz
Impedance: 1M Ohms (Capacitively coupled input)
Overrange: 750VDC/530VAC except 220VDC/AC on 199.9mV range
DIP switch selectable input range and program enable
 ± 3.5 -digit display updated every 0.4 seconds

DC Current: ± 199.9 uADC, ± 1.999 mADC, ± 19.99 mADC, ± 199.9 mADC
Accuracy: $\pm 0.1\%$ of reading, ± 1 digit and ± 120 PPM/C
Impedance: 199.9mV/Selected range
Overrange: 30mA, 100mA, 300mA, and 1A max. respectively
DIP switch selectable input range and program enable
 ± 3.5 digit display updated every 0.4 seconds

AC Current: 199.9uAAC, 1.999mAAC, 19.99mAAC, 199.9mAAC (All ranges True RMS)
Accuracy: $\pm 0.5\%$ of reading, ± 3 digits and ± 200 PPM/C (Crest factor=1)
plus $\pm 0.7\%$ for Crest factor=1-3 and $\pm 2.5\%$ for Crest factor=5
Frequency range: 40 to 1000 Hz
Impedance: 199.9mV/Selected range (Shunt output capacitively coupled)
Overrange: 30mA, 100mA, 300mA and 1A max. respectively
DIP switch selectable input range and program enable
 ± 3.5 digit display updated every 0.4 seconds

5AAC: Fixed 5AAC range (True RMS)
Accuracy: $\pm 0.4\%$ of reading, ± 3 digits and ± 200 PPM/C (Crest factor=1)
plus $\pm 0.7\%$ for Crest factor=1-3 and $\pm 2.5\%$ for Crest factor=5
Frequency range: 40 to 1000 Hz
Impedance: 0.02 Ohms (Shunt output capacitively coupled)
Overrange: 10A max.
DIP switch selectable input range and program enable
 ± 3.5 digit display updated every 0.4 seconds

Process: 4-20mADC, 0-10VDC, 1-5VDC
Accuracy: $\pm 0.1\%$ of reading, ± 1 digit, and ± 80 PPM/C
Separate current and voltage input terminals
Impedance: 100 Ohms (Current input) and 1.27M Ohms (Voltage input)
Overrange: 50mA max. (Current input) and 100V max. (Voltage input)
DIP switch selectable program enable
 ± 3.5 digit display updated every 0.4 seconds
24VDC $\pm 10\%$, 90mA max., short circuit protected power output

Temperature: J,K and T thermocouples and 4-wire Pt100 RTD (IEC 751)
J -200 to 760C (-328 to 1400F)
K -200 to 1370C (-328 to 2498F)
T -200 to 400C (-328 to 752F)
Accuracy: ± 1 degree C and ± 100 PPM/C (ambient)
plus ± 1 degree C thermocouple cold junction
RTD excitation current 175uADC
Impedance: 22M Ohms
Overrange: 5V max.
DIP switch input terminal configuration and program enable
4 digit display plus F/C indication updated every 0.5 seconds

Ratemeter: Single-channel rate input
DIP switch selectable sink/source type, sensitivity and freq. response
Impedance: 4.75K Ohms to +5VDC or 34.9K Ohms to Grd.
Voltage: high 3.5 to 28VDC, low 0 to 1.9VDC
or 200mVpp to 65Vrms (@34.9K Ohms)
Frequency response: 200Hz or 10KHz (5V signals)
Rate scaling 0.001 to 9999 with programmable decimal point
Rate and scaling accuracy: $\pm 0.05\%$ and 1 digit
Average time: 0.1 to 99.9 secs.
Zero time: 0.1 to 99.9 secs.
5-digit display
12VDC $\pm 12\%$, 75mA max., short circuit protected power output

Counter: Dual-channel count/rate inputs with multiple count modes
DIP switch selectable sink/source type, sensitivity and freq. response
Impedance: 4.75K Ohms to +5VDC or 34.9K Ohms to Grd.
Voltage: high 3.5 to 28VDC, low 0 to 1.9VDC
or 200mVpp to 65Vrms (@34.9K Ohms)
Frequency response: 200Hz or 10KHz (5V signals)
Count scaling 0.00001 to 9.99999 with programmable displayed decimal point
5-digit ratemeter w/minus sign, 6-digit counter or 5-digit counter w/minus sign
2 presets
Rate scaling 0.001 to 9999 with programmable displayed decimal point
Rate and scaling accuracy: $\pm 0.05\%$ and 1 digit
3 control inputs with programmable functions
Front panel programming: Operator reset and setpoint, scale and display alteration

6-digit display
12VDC $\pm 12\%$, 75mA max., short circuit protected power output



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**PREDETERMINED
ELECTRONIC
COUNT / CONTROL**

Series 100

The Solid State 100 is ideal for most production control applications, from predetermined count/control to complex, automatic high speed cycling applications. The control is adaptable to many modes of operation by simply changing the wiring connections on the terminal board, located at the rear of the unit.

Series 1700

Series 1700 is a single level device with two or four figures of predetermined count control. A six figure electromechanical counter provides a readout of either; the number of batches/cycles completed, or the total of each one, ten, or one hundred input counts. The Series 1700 will automatically reset when the predetermined count is reached.

Series 1800

The Series 1800 is a five figure, single level, predetermined count/control. The unit features user programmable function selection, made easily selectable via a DIP selector switch and/or simple wiring to a terminal block located at the rear of the control.

Series 1900

The Durant Series 1900 is an all solid state, two level predetermined count/control. It is the most versatile control of its type available and the product of a decade of innovating engineering experience and electronic control manufacturing know-how. The Series 1900 can be quickly and simply programmed, by the user, to suit the exact control requirements needed for most applications.

Series 2000

The Durant Series 2000 electronic count/control features modular construction for economical design flexibility. Available with either one or two independent levels of predetermining, plus numerous input and output options. High signal circuitry assures maximum industrial noise immunity to insure accurate count.

Series 3801

The Series 3801-413 is a four-figure, predetermined electronic count/control. The unit features compact size, panel mounting, pushbutton preset ease, and automatic or manual reset to preset operation. Because of its solid state construction, the Series 3801 is ideal for applications such as: measuring and dispensing pumps, batch packaging, printing press and bindery control, copier and reproduction equipment, and other rapid recycle batching operations.

Series 6400

The Durant Series 6400 programmable count/control is a 64 level coincidence controller that is totally user programmable. The unit features 16 open collector transistor outputs to perform control functions. The controller can be employed as a six figure count controller, a timer controller, or any combination of both. The Series 6400 can be programmed to count up to 64 coincidence points or count down from a preset number to zero, 64 separate times.

SERIES 100 ELECTRONIC COUNT/CONTROL



55100-450

The Solid State 100 is ideal for most production control applications, from predetermined count/control to complex, automatic high speed cycling applications. The control is adaptable to many modes of operation by simply changing the wiring connections on the terminal board, located at the rear of the unit. The standard Solid State 100 control can be wired to manually reset at the end of a cycle, or wired to automatically reset to repeat the cycle. The control output relay, rated 10 AMPS 120 VAC, can have a time out (.1 to 10 seconds), latch until reset is complete or latch until an external contact is operated, by selection of the rear terminal wiring.

Specifications

POWER REQUIREMENTS

NORMAL POWER INPUT (Control is not fused)

Model 55100-450

90-132 VAC, 50/60 Hz, .09 amps maximum

Model 55100-451

196-264 VAC, 50/60 Hz, .09 amps maximum

STANDBY BATTERY (Displays will not light)

+12 VDC

.02 amps maximum drain without the relay energized

.09 amps maximum drain with the relay energized

POWER OUTPUT (for Transducers)

+15 (+1, -2) VDC at .1 amp maximum

COUNT INPUT

INPUT VOLTAGE REQUIREMENT

Low Input: 0-4 volts

High Input: 11-28 volts

INPUT IMPEDANCE

6800 ohms to +15 VDC

LOW SPEED OPERATION

Closure to Common (contact or transistor):

1 millisecond minimum LOW time

5.5 millisecond minimum HIGH time

150 Hz with above times, 90 Hz maximum with 50% duty cycle

With count sources having less than 2000 ohms pull up to 15V+ and less than 200 ohms to common:

1 millisecond minimum LOW time

2 milliseconds minimum HIGH time

300 Hz with above time, 250 Hz maximum with 50% duty cycle

HIGH SPEED OPERATION

Closure to Common (Contact or Transistor):

18 microseconds minimum LOW time

115 microseconds minimum HIGH time

7500 Hz with above times, 4300 Hz maximum with 50% duty cycle

With count sources having less than 2000 ohms pull up to 15V+ and less than 200 ohms to common:

18 microseconds minimum LOW time

40 microseconds minimum HIGH time

15 KHz with above times, 12.5 KHz maximum with 50% duty cycle

COUNT INVERT: Counts are normally entered on low going edge of the input signal. If the Count Invert terminal is connected to common, counts will be entered on the high going edge.

OUTPUTS

RELAY

Two form "C" contacts SPDT, 10 amps resistive at 28 VDC

10 amps resistive at 120 VAC, 7.5 amps resistive at 240 VAC

1/3 H.P. at 120 VAC

TRANSISTOR

Open Collection, 28 VDC maximum blocking voltage

250 milliamps maximum sink current

RELAY OPERATING MODES

Relay Pick:

When predetermined count is reached, only on a count

Relay Drop-Out:

100 milliseconds after it picks if terminal 9 is connected to terminal 6 or 8

100 milliseconds to 10 seconds after it picks if a resistor is connected

between terminal 9 and terminal 6 or 8. Use 100,000 ohms per seconds.

After on external signal at terminal 15:

Closure to Common, Sink 2.2 milliamps, 15 milliseconds minimum

After the RESET signal is removed if terminal 10 is connected to terminal 6 or 8

RESET

MANUAL

Front Panel Switch

Remote:

Closure to Common

Impedance: 6800 ohms to +15 VDC, 15 milliseconds minimum

AUTOMATIC RECYCLE

GENERAL

FRONT PANEL

Displays:

4 digits, .3 inch red LED's

Leading zero blanking

Predetermine Selection:

Bi-Directional selector switches

Reset:

Momentary push button switch, Reset overrides count

ORDERING INFORMATION

Model Number	Product Description
55100-450	Single Preset Control, 120 VAC
55100-451	Single Preset Control, 240 VAC

SERIES 1700 BATCH / CYCLE CONTROL



1700-401-P

The Series 1700 is a single level device with 2 or 4 figures of predetermined count control. A 6 figure electro-mechanical counter provides a readout of either; the number of batches/cycles completed, or the total of each one, ten, or one hundred input counts. The Series 1700 will automatically reset when the predetermined count is reached. Output relay can be wired for time delay up to 10 seconds. The unique feature of the Series 1700 is that the unit will control a predetermined batch and also provide a readout of the total number of batches that have been performed. The unit is ideal for applications where the number of cycles must be recorded, such as in the publishing industry, packaging and container industries as well as other applications where control and totalizing are required.

Specifications

POWER REQUIREMENTS

120 VAC, (+10% -20%), 50/60 Hertz. Nominal wattage is 5 watts.

LOW SPEED INPUT

(0-150 counts per second)

Minimum contact closure time: 1 millisecond
Minimum contact open time: 5.5 millisecond

HIGH SPEED INPUT

Control W/Batch Counter* 0-7500 CPS
Control W/times 100 Totalizer 0-1700 CPS
Control W/times 10 Totalizer 0-170 CPS
Control W/times 1 Totalizer 0-17 CPS
Minimum contact closure time: 20 microseconds
Minimum contact open time: 110 microseconds

*Speed limited to 17 CPS of Batch Totalizer

OUTPUT RELAY

Two form "C" (SPDT) relay contacts. The relay will change state within 20 milliseconds after coincidence of count and predetermined count selection. Time Out—100 ± 20 milliseconds. The time-out can be increased up to 10 seconds by adding an external resistor.

CONTROL RESET

The control automatically resets when the predetermined number is reached.

COUNTER/TOTALIZER RESET

The electromechanical counter is available in either non-reset or pushbutton reset versions.

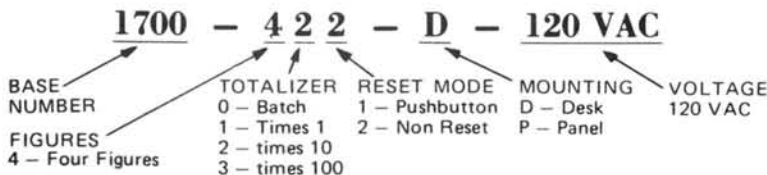
NUMBER OF DIGITS

Predetermined Control — 2 or 4
Counter/Totalizer — 6

Ordering Information

When ordering determine the designation for: number of figures on control, totalizer function and reset mode, if totalizer is resettable and type of control mounting, then add them to the base number.

EXAMPLE: If control desired is a four figure, with times 10 readout, non reset, desk mount Series 1700, it would be ordered as follows:



Selection Table

Number of Figures	Voltage	Totalizer Function	Totalizer Reset Mode	Model number
4	120 VAC	Batch	Pushbutton	1700-401-P
4	120 VAC	Batch	None	1700-402-P
4	120 VAC	times 1	Pushbutton	1700-411-P
4	120 VAC	times 1	None	1700-412-P
4	120 VAC	times 10	Pushbutton	1700-421-P
4	120 VAC	times 10	None	1700-422-P
4	120 VAC	times 100	Pushbutton	1700-431-P
4	120 VAC	times 100	None	1700-432-P



1800-511

SERIES 1800 ELECTRONIC COUNT/CONTROL

The Series 1800 is a five figure, single level, predetermined count/control. The unit features user programmable function selection, made easily selectable via a DIP selector switch and/or simple wiring to a terminal block located at the rear of the control. The front panel of the Series 1800 features bi-directional switches for quick push-button predetermined or preset count selection, and brilliant LED count display. The Series 1800 is designed with proven, high noise immune, CMOS circuitry. The unit can count up and provide a control relay output at a preset number or reset to a preset number, count down and provide a control relay output at zero. The control can be operated with either of three common voltages; 120VAC, 50/60 Hz, 240VAC, 50/60 Hz, or 24 VDC. Terminals for connecting a standby battery are provided; as is a trickle charge circuit for the battery. The unit also has rear terminal power (15VDC @ 100 milliamps) for driving transducers. Other user programmable options include: auto recycle, count invert, relay latch until reset complete, and reverse relay operation.

Specifications

POWER REQUIREMENTS

120 / 240VAC, + 10%-20% 50 / 60Hz, user programmable
 24VDC power input
 Battery charge / operation input provided.
 Maximum power required: 10V.A.

COUNT INPUTS

Low speed input: (0-150 counts per second).
 Minimum of 1 millisecond contact closure (EQ. 1 ohm or 0.1V).
 Minimum of 5.5 millisecond contact open time (EQ. 1 megohm or 15V).
 Operation at 10% and 90% points (0-100 counts per second).
 Minimum of 2 milliseconds at 500 ohms or 1.5V.
 Minimum of 7.5 milliseconds at 50 kilohms or 13.5V.
 High speed input (0-7.5K counts per second).
 Minimum of 20 microseconds at 0 ohms or 0.1V.
 Minimum of 110 microseconds at 1 megohm or 15V.
 Operation at 10% and 90% points (0 - 5K counts per second).
 Minimum of 45 microseconds at 500 ohms or 1.5V.
 Minimum of 160 microseconds at 50 kilohms or 13.5V.
 Count invert: Counts are normally entered as the contact closes. This operation can be inverted by rear panel selection, so that the count is entered as the contact opens.

CONTACT OUTPUT(Two "Form C" (SPDT) Relay Contacts)

The relay will change state within 20 milliseconds after coincidence.

Contact rating: 240VAC, 2 amperes, 80% power factor.
 Breakdown voltage: 500VAC between open contacts, 1500VAC between all other insulated points.
 Normal and reverse relay operation — user programmable.

RELAY OPERATING MODES (User Programmable)

Time out: 50 milliseconds relay operation. The time out can be increased to 10 seconds by adding a series resistor between time out terminal and + 15VDC terminal.
 Unlatch: Relay will remain latched until remote contact is closed to ground.
 Latch until reset complete. Relay will remain latched until front panel or remote reset switch is closed and released.

AUXILIARY POWER OUTPUT

15VDC at 100 ma.

COUNTER RESET(Reset always overrides count input.)

Manual reset switch on front panel.
 Remote reset terminal on rear of unit.
 Automatic reset user programmable.
 Resets to zero in up count mode and to preset number in down count mode.

GENERAL

5 digits of predetermining selection and display.
 Seven segment, .3" LED displays.
 Up or down counting user programmable.

Ordering Information

The Series 1800 count/control has all operational modes built into a single model. Therefore when ordering, request Model number **1800-511**.

SERIES 1900 DUAL LEVEL COUNT / CONTROL



1900-512-P

The Durant Series 1900 is an all-solid state, two level predetermined count/control. It is the most versatile control of its type available and the product of a decade of innovative engineering experience and electronic control manufacturing know-how. The Series 1900 can be quickly and simply programmed, by the user, to suit the exact control requirements needed for most applications. Options include: various reset and/or recycle modes — including time delay, output control relay flexibility, input count mode selectability (either count up, down or bi-directional input). Input power is either 12-30VDC or 120VAC. All of these options are selectable in each Standard Series 1900 count/control via a DIP selector switch or simple wire changes to a terminal block located at the rear of the unit.

Design features include reliable CMOS noise immune circuitry, brilliant .3" high LED readout, and Bi-directional pushbutton predetermined count selection for fast, easy operation. Replaceable output relays, which are externally accessible, can be changed in seconds. The Series 1900 is designed for a wide variety of industrial count/control and instrumentation applications such as: coil winding, length measurement and cut-off, batch or cycle control, test equipment, scaling, plus controlling other types of production operations.

Specifications:

POWER REQUIREMENTS

Normal Power Input
120VAC (+10% -20%) 50/60 Hz

DC Power Input
12-30 VDC
175 ma typical, 275 ma maximum current drain

Standby Battery (Display Extinguished) @ 12VDC

COUNT INPUTS

Operating Modes
Add/Subtract — separate count inputs
Add/Subtract — common count input
Bi-directional
Input doubler

Operating Speeds
High speed (to 5K Hz)
Minimum "LOW" time; 25 microseconds
Minimum "HIGH" time; 175 microseconds
Low speed (to 150 Hz)
Minimum "LOW" time; 1 millisecond
Minimum "HIGH" time; 5 milliseconds

CONTROL OUTPUT

One Form C set of relay contacts for each level, rated at

5 amps typical, 7.5 amps maximum at 120 VAC or 28 VDC.
(Resistive Load) or solid state transistor output 28 VDC
@ 100 ma.

Relay operating modes
Time Out 50 milliseconds to 10 seconds
Latch until external contact closure
Unlatch Level A at Level B
Unlatch Level B at Level A

RECYCLE OPERATING

Manual — Front Panel
Remote — External contact closure
Automatic
Reset/Preset

BYPASS

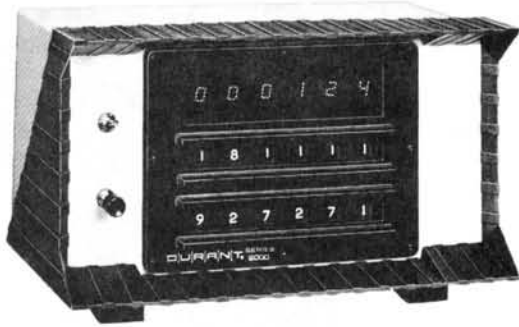
In the Bypass mode, all Level A functions (output, recycle, and unlatch) are disabled.

PHYSICAL

Display .300 inch high LED display
Bi-Direction predetermined pushbutton selector switches
Terminals: Screw type

Ordering Information:

The Series 1900 has all operational modes built into a single model. Therefore, when ordering, request: Model Number 1900-512-P.



2000-621-D

**SERIES 2000
SINGLE or DUAL LEVEL
COUNT / CONTROL**

The Durant Series 2000 electronic count/control features modular construction for economical design flexibility. Available with either one or two independent levels of predetermining, two thru six digits of control, plus numerous input and output options. High signal circuitry assures maximum industrial noise immunity to insure accurate count. Brilliant solid state light emitting diode display is easy to read even under adverse light conditions.

Predetermined count settings are selected with bi-directional pushbutton switches—one button to add, the other to subtract. The switch features large easy to read numbers set close to sealed windows for wide angle visibility. Precious metal switch contacts insure maximum reliability in industrial environments.

Standard options available are: desk or panel mounted units, transistor output, crop cut. Additional options include count totalizer, batch or cycle counting. A broad variety of Durant count input transducers complement the Series 2000 count control.

Specifications:

POWER REQUIREMENTS:

- 120 VAC ± 10% 50-60 Hz — 35 watts maximum.
- 240 VAC ± 10% 50-60 Hz (optional).

LOW SPEED INPUT: 0 to 150 counts per second

- Minimum contact closure time: 1 MSec.
- Minimum contact open time: 5 MSecs.
- Required switch ratings: 15 ma @ 15 VDC

HIGH SPEED INPUT: 0 to 20K Hz

Counts on increasing or decreasing resistance or voltage: Decreasing input must be; "High" a minimum of 40 microseconds, "Low" a minimum of 10 microseconds.

Increasing voltage or resistance must be; "High" a minimum of 10 microseconds, "Low" a minimum of 40 microseconds.

OUTPUTS: Two SPDT (form C) contacts for each level of predetermining. 10 Amp non-inductive @ 120 VAC.

RELAY ACTUATE TIME: 15 milliseconds after coincidence.

RELAY HOLD TIME: 100 milliseconds (±20 milliseconds)

Note: Latch until reset and latch until customer contact closure or opening can be programmed at the rear terminals.

Relay hold time can be increased up to 10 seconds by adding an external resistor.

TRANSISTOR OUTPUT: A transistor output instead of relay contacts at coincidence is available as a standard option. Transistor rating 150 ma @ 24 VDC.

RESET: Front panel switch or remote switch (SPST switch). Reset Time 15 microseconds.

AUTOMATIC RECYCLE: Either predetermining level can be programmed to reset the count to zero for automatic recycle applications. Maximum count speed is not affected by operating in this mode.

NUMBER OF DIGITS: Two to six digits, with one or two levels of predetermining.

DISPLAYS: Light emitting diodes.

Note: Displays are completely independent circuit functions.

PREDETERMINING SELECTION: Bi-Directional Push Button Selector Switches. Figure size .220" x .170".

Ordering Information:

To select the correct model number for your application, determine designation for: Number of figures, levels of pre-

determined count/control, type of mounting, and voltage.

EXAMPLE:

2000 — 4 1 1 — P — 120/60

BASE NUMBER

NUMBER OF FIGURES

LEVELS OF PREDETERMINING

TYPES OF MOUNTING

VOLTAGE

- 2 — two figure
- 3 — three figure
- 4 — four figure
- 5 — five figure
- 6 — six figure

- 1 — one level
- 2 — two level

- D — desk mount
- P — panel mount
- S — splashproof
- E — steel cover

- 120 VAC, 50/60 Hz
- 240 VAC, 50/60 Hz

SERIES 3801 SINGLE PRESET COUNT / CONTROL



3801-413

The Series 3801-413 is a four figure, predetermined electronic count/control. The unit features two outputs: a transistor turns "ON" nine counts before zero, and a relay actuates at zero. The unit features compact size, panel mounting, pushbutton preset ease, and automatic or manual reset to preset operation. To operate the Series 3801, a predetermined count is set on bi-directional switches located on the front of the unit. After reset, a green LED light indicates the unit is ready to accept counts for an operation cycle. The light goes off after the first count. The outputs remain latched until the control is reset or for .15 seconds as selected. Because of its solid state construction, the Series 3801 is ideal for applications such as: measuring and dispensing pumps, batch packaging, printing press and bindary control, copier and reproduction equipment, and other rapid recycle batching operations.

Specifications:

GENERAL

4 figures of preset.
Prewarm at 9 counts before 0.
Green LED indicator lit when unit is reset, turns off when first count is entered.
Operating Temperature: -18°C to $+50^{\circ}\text{C}$.
Storage Temperature: -40°C to $+75^{\circ}\text{C}$.

POWER REQUIREMENTS

DC Voltage Input +14.0V minimum to +26.5V maximum, tolerance includes regulation and ripple.
Current: 65 ma maximum.

OUTPUT

PREWARN

Open collector NPN transistor with a 30 volt Zener diode for protection. Current sink capability is 100 ma. during prewarn time.

COINCIDENCE

Single Form C relay. Maximum current is .5 amp at 120VAC.

COUNT

1. Maximum count rate is 150 counts per second obtainable with the following input switching conditions:
 - A. Minimum of 1 ms contact closure ($5\ \Omega$ or $< .1\text{V}$ pulldown).
 - B. Minimum of 5.5 ms contact open (1 megohm or $> 15\text{V}$).

CONTROL

Count and preset input devices must be rated for 15V at 17 ma minimum, external transistor or contact closure to common.

RESET

Not less than .01 SEC., (Must end not less than .02 SEC. before the first count.)

AUTO RECYCLE

Counter will automatically reset and begin new cycle when Auto Recycle control line is connected to Common. .15 second Relay Time Out must be used with Auto Recycle.

OUTPUT RELAY TIME OUT

Output relay will actuate for:

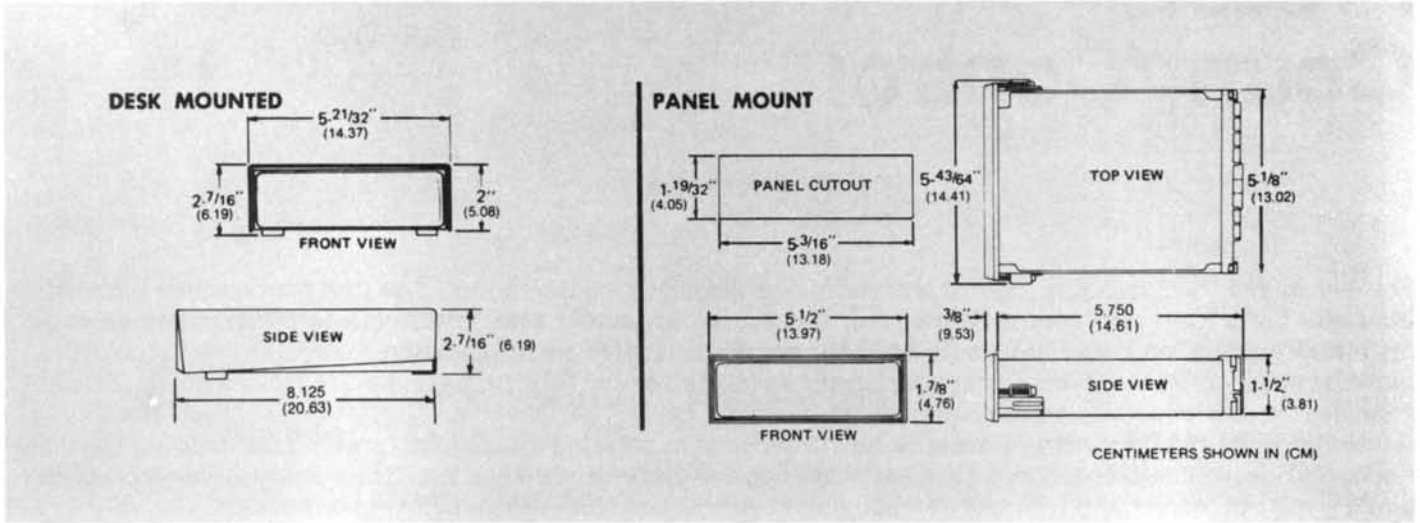
1. 0.150 seconds with Time Out Control line connected to common.
2. Until control is reset when Time Out Control line is not connected.

Ordering Information:

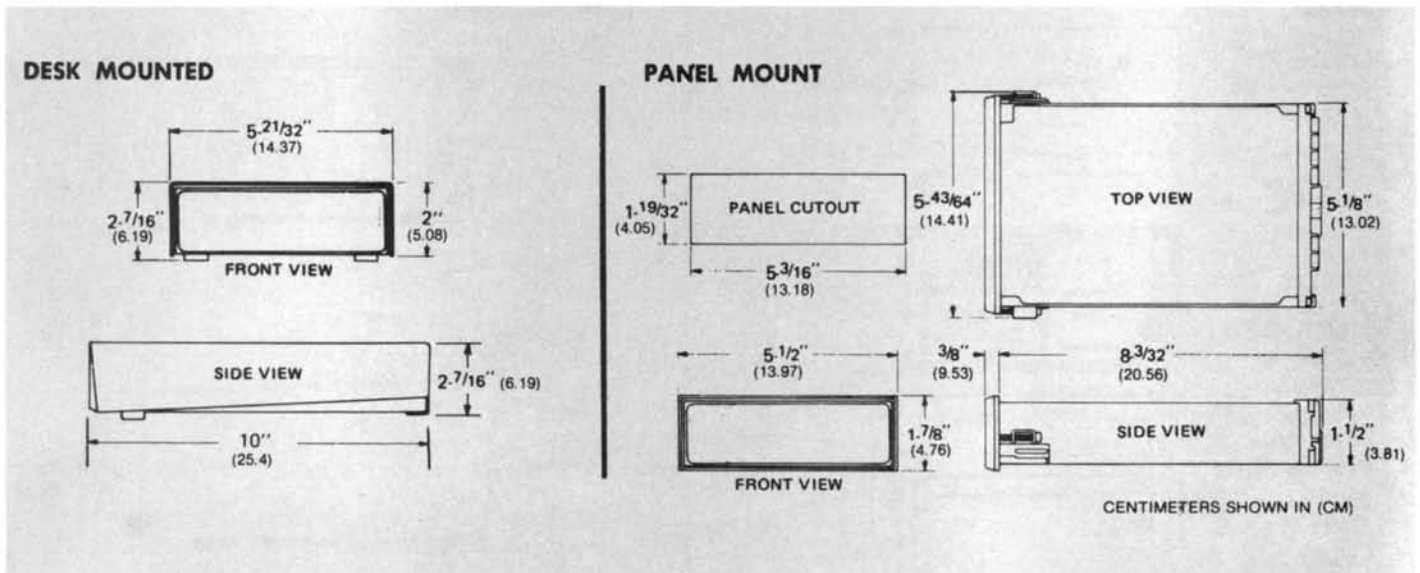
The Series 3801 has all operational modes in a single model. Therefore, when ordering, request **Model 3801-413**.

DIMENSIONS ELECTRONIC COUNT CONTROL

Series 100

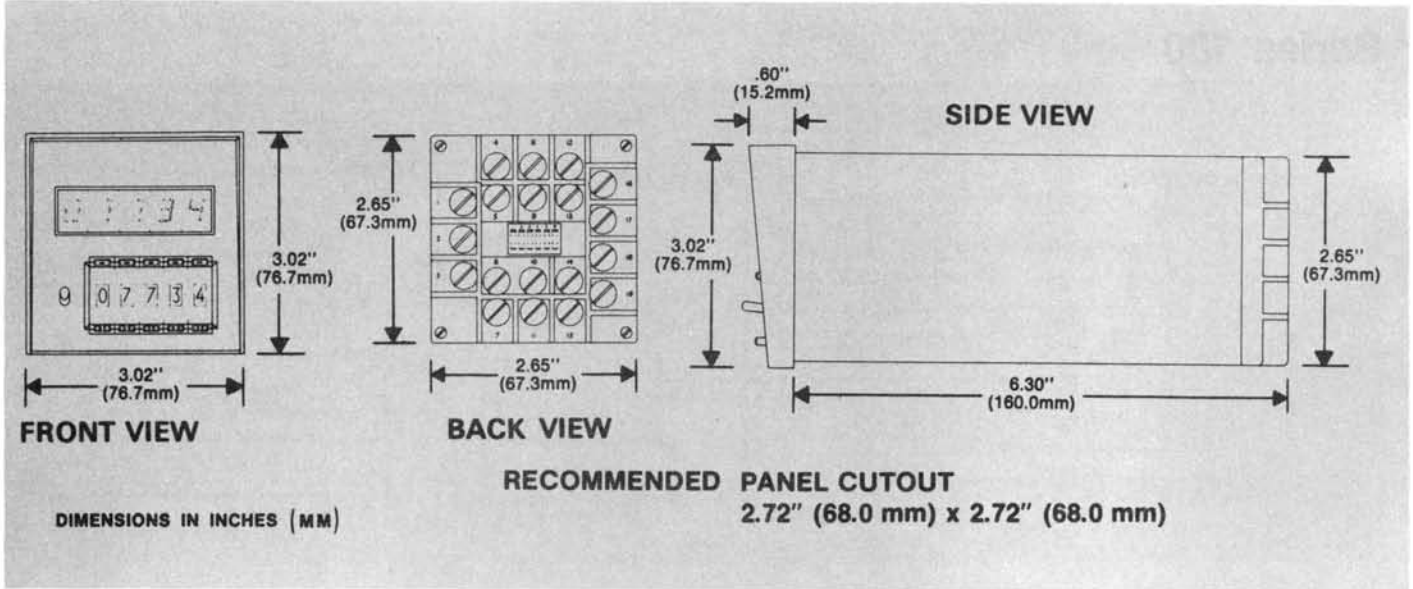


Series 1700

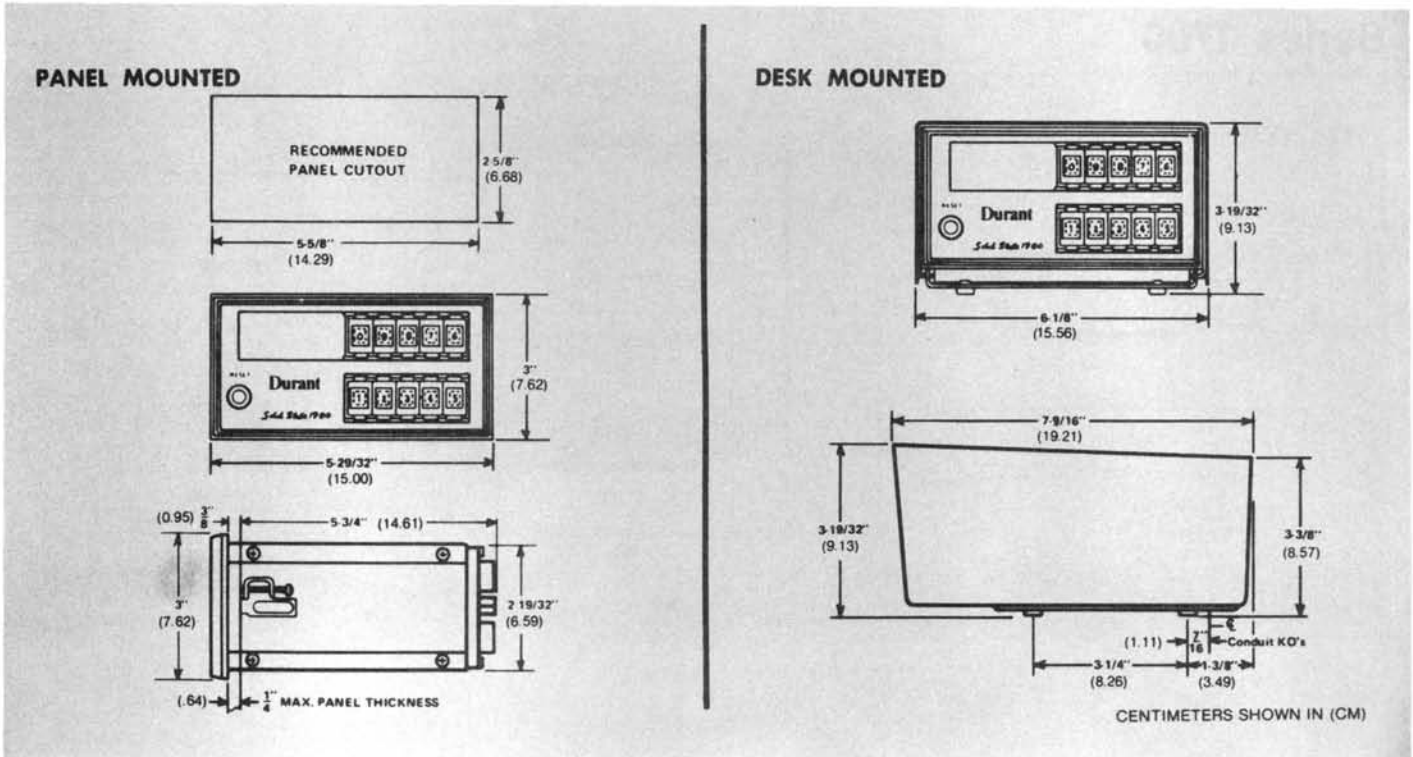


DIMENSIONS ELECTRONIC COUNT / CONTROL

Series 1800

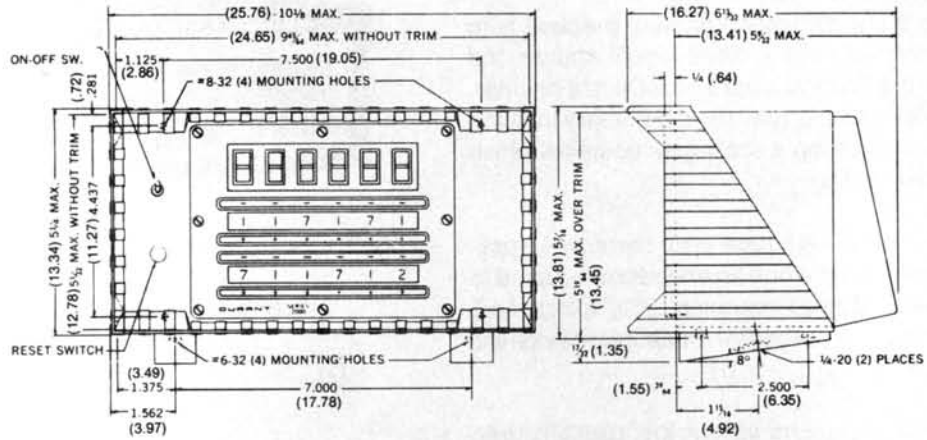


Series 1900



DIMENSIONS ELECTRONIC COUNT CONTROL

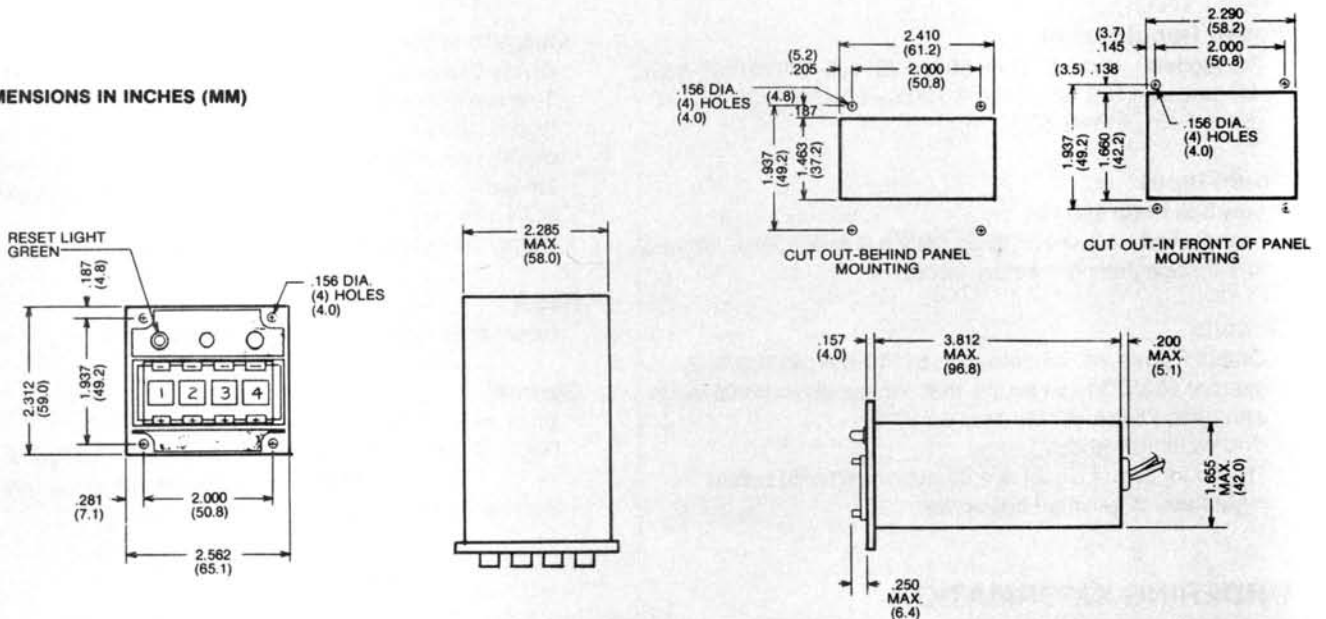
Series 2000



CENTIMETERS SHOWN IN (CM)

Series 3801

DIMENSIONS IN INCHES (MM)



**PREDETERMINED
ELECTRONIC
COUNT / CONTROL**

Series 100

The Solid State 100 is ideal for most production control applications, from predetermined count/control to complex, automatic high speed cycling applications. The control is adaptable to many modes of operation by simply changing the wiring connections on the terminal board, located at the rear of the unit.

Series 1700

Series 1700 is a single level device with two or four figures of predetermined count control. A six figure electromechanical counter provides a readout of either; the number of batches/cycles completed, or the total of each one, ten, or one hundred input counts. The Series 1700 will automatically reset when the predetermined count is reached.

Series 1800

The Series 1800 is a five figure, single level, predetermined count/control. The unit features user programmable function selection, made easily selectable via a DIP selector switch and/or simple wiring to a terminal block located at the rear of the control.

Series 1900

The Durant Series 1900 is an all solid state, two level predetermined count/control. It is the most versatile control of its type available and the product of a decade of innovating engineering experience and electronic control manufacturing know-how. The Series 1900 can be quickly and simply programmed, by the user, to suit the exact control requirements needed for most applications.

Series 2000

The Durant Series 2000 electronic count/control features modular construction for economical design flexibility. Available with either one or two independent levels of predetermining, plus numerous input and output options. High signal circuitry assures maximum industrial noise immunity to insure accurate count.

Series 3801

The Series 3801-413 is a four-figure, predetermined electronic count/control. The unit features compact size, panel mounting, pushbutton preset ease, and automatic or manual reset to preset operation. Because of its solid state construction, the Series 3801 is ideal for applications such as: measuring and dispensing pumps, batch packaging, printing press and bindery control, copier and reproduction equipment, and other rapid recycle batching operations.

Series 6400

The Durant Series 6400 programmable count/control is a 64 level coincidence controller that is totally user programmable. The unit features 16 open collector transistor outputs to perform control functions. The controller can be employed as a six figure count controller, a timer controller, or any combination of both. The Series 6400 can be programmed to count up to 64 coincidence points or count down from a preset number to zero, 64 separate times.

SERIES 100 ELECTRONIC COUNT/CONTROL



55100-450

The Solid State 100 is ideal for most production control applications, from predetermined count/control to complex, automatic high speed cycling applications. The control is adaptable to many modes of operation by simply changing the wiring connections on the terminal board, located at the rear of the unit. The standard Solid State 100 control can be wired to manually reset at the end of a cycle, or wired to automatically reset to repeat the cycle. The control output relay, rated 10 AMPS 120 VAC, can have a time out (.1 to 10 seconds), latch until reset is complete or latch until an external contact is operated, by selection of the rear terminal wiring.

Specifications

POWER REQUIREMENTS

NORMAL POWER INPUT (Control is not fused)

Model 55100-450

90-132 VAC, 50/60 Hz, .09 amps maximum

Model 55100-451

196-264 VAC, 50/60 Hz, .09 amps maximum

STANDBY BATTERY (Displays will not light)

+12 VDC

.02 amps maximum drain without the relay energized

.09 amps maximum drain with the relay energized

POWER OUTPUT (for Transducers)

+15 (+1, -2) VDC at .1 amp maximum

COUNT INPUT

INPUT VOLTAGE REQUIREMENT

Low Input: 0-4 volts

High Input: 11-28 volts

INPUT IMPEDANCE

6800 ohms to +15 VDC

LOW SPEED OPERATION

Closure to Common (contact or transistor):

1 millisecond minimum LOW time

5.5 millisecond minimum HIGH time

150 Hz with above times, 90 Hz maximum with 50% duty cycle

With count sources having less than 2000 ohms pull up to 15V+ and less than 200 ohms to common:

1 millisecond minimum LOW time

2 milliseconds minimum HIGH time

300 Hz with above time, 250 Hz maximum with 50% duty cycle

HIGH SPEED OPERATION

Closure to Common (Contact or Transistor):

18 microseconds minimum LOW time

115 microseconds minimum HIGH time

7500 Hz with above times, 4300 Hz maximum with 50% duty cycle

With count sources having less than 2000 ohms pull up to 15V+ and less than 200 ohms to common:

18 microseconds minimum LOW time

40 microseconds minimum HIGH time

15 KHz with above times, 12.5 KHz maximum with 50% duty cycle

COUNT INVERT: Counts are normally entered on low going edge of the input signal. If the Count Invert terminal is connected to common, counts will be entered on the high going edge.

OUTPUTS

RELAY

Two form "C" contacts SPDT, 10 amps resistive at 28 VDC

10 amps resistive at 120 VAC, 7.5 amps resistive at 240 VAC

1/3 H.P. at 120 VAC

TRANSISTOR

Open Collection, 28 VDC maximum blocking voltage

250 milliamps maximum sink current

RELAY OPERATING MODES

Relay Pick:

When predetermined count is reached, only on a count

Relay Drop-Out:

100 milliseconds after it picks if terminal 9 is connected to terminal 6 or 8

100 milliseconds to 10 seconds after it picks if a resistor is connected

between terminal 9 and terminal 6 or 8. Use 100,000 ohms per seconds.

After on external signal at terminal 15:

Closure to Common, Sink 2.2 milliamps, 15 milliseconds minimum

After the RESET signal is removed if terminal 10 is connected to terminal 6 or 8

RESET

MANUAL

Front Panel Switch

Remote:

Closure to Common

Impedance: 6800 ohms to +15 VDC, 15 milliseconds minimum

AUTOMATIC RECYCLE

GENERAL

FRONT PANEL

Displays:

4 digits, .3 inch red LED's

Leading zero blanking

Predetermine Selection:

Bi-Directional selector switches

Reset:

Momentary push button switch, Reset overrides count

ORDERING INFORMATION

Model Number	Product Description
55100-450	Single Preset Control, 120 VAC
55100-451	Single Preset Control, 240 VAC

65

SERIES 1700 BATCH / CYCLE CONTROL



1700-401-P

The Series 1700 is a single level device with 2 or 4 figures of predetermined count control. A 6 figure electro-mechanical counter provides a readout of either; the number of batches/cycles completed, or the total of each one, ten, or one hundred input counts. The Series 1700 will automatically reset when the predetermined count is reached. Output relay can be wired for time delay up to 10 seconds. The unique feature of the Series 1700 is that the unit will control a predetermined batch and also provide a readout of the total number of batches that have been performed. The unit is ideal for applications where the number of cycles must be recorded, such as in the publishing industry, packaging and container industries as well as other applications where control and totalizing are required.

Specifications

POWER REQUIREMENTS

120 VAC, (+10% -20%), 50/60 Hertz. Nominal wattage is 5 watts.

LOW SPEED INPUT

(0-150 counts per second)

Minimum contact closure time: 1 millisecond
Minimum contact open time: 5.5 millisecond

HIGH SPEED INPUT

Control W/Batch Counter* 0-7500 CPS
Control W/times 100 Totalizer 0-1700 CPS
Control W/times 10 Totalizer 0-170 CPS
Control W/times 1 Totalizer 0-17 CPS
Minimum contact closure time: 20 microseconds
Minimum contact open time: 110 microseconds

*Speed limited to 17 CPS of Batch Totalizer

OUTPUT RELAY

Two form "C" (SPDT) relay contacts. The relay will change state within 20 milliseconds after coincidence of count and predetermined count selection. Time Out—100 ± 20 milliseconds. The time-out can be increased up to 10 seconds by adding an external resistor.

CONTROL RESET

The control automatically resets when the predetermined number is reached.

COUNTER/TOTALIZER RESET

The electromechanical counter is available in either non-reset or pushbutton reset versions.

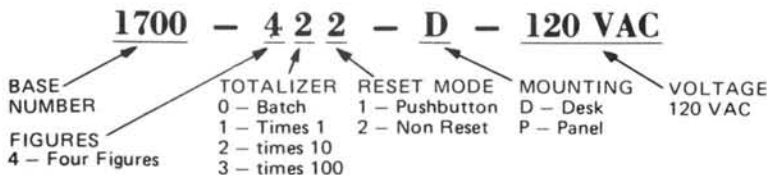
NUMBER OF DIGITS

Predetermined Control — 2 or 4
Counter/Totalizer — 6

Ordering Information

When ordering determine the designation for: number of figures on control, totalizer function and reset mode, if totalizer is resettable and type of control mounting, then add them to the base number.

EXAMPLE: If control desired is a four figure, with times 10 readout, non reset, desk mount Series 1700, it would be ordered as follows:



Selection Table

Number of Figures	Voltage	Totalizer Function	Totalizer Reset Mode	Model number
4	120 VAC	Batch	Pushbutton	1700-401-P
4	120 VAC	Batch	None	1700-402-P
4	120 VAC	times 1	Pushbutton	1700-411-P
4	120 VAC	times 1	None	1700-412-P
4	120 VAC	times 10	Pushbutton	1700-421-P
4	120 VAC	times 10	None	1700-422-P
4	120 VAC	times 100	Pushbutton	1700-431-P
4	120 VAC	times 100	None	1700-432-P



1800-511

SERIES 1800 ELECTRONIC COUNT/CONTROL

The Series 1800 is a five figure, single level, predetermined count/control. The unit features user programmable function selection, made easily selectable via a DIP selector switch and/or simple wiring to a terminal block located at the rear of the control. The front panel of the Series 1800 features bi-directional switches for quick push-button predetermined or preset count selection, and brilliant LED count display. The Series 1800 is designed with proven, high noise immune, CMOS circuitry. The unit can count up and provide a control relay output at a preset number or reset to a preset number, count down and provide a control relay output at zero. The control can be operated with either of three common voltages; 120VAC, 50/60 Hz, 240VAC, 50/60 Hz, or 24 VDC. Terminals for connecting a standby battery are provided; as is a trickle charge circuit for the battery. The unit also has rear terminal power (15VDC @ 100 milliamps) for driving transducers. Other user programmable options include: auto recycle, count invert, relay latch until reset complete, and reverse relay operation.

Specifications

POWER REQUIREMENTS

120 / 240VAC, + 10%-20% 50 / 60Hz, user programmable
 24VDC power input
 Battery charge / operation input provided.
 Maximum power required: 10V.A.

COUNT INPUTS

Low speed input: (0-150 counts per second).
 Minimum of 1 millisecond contact closure (EQ. 1 ohm or 0.1V).
 Minimum of 5.5 millisecond contact open time (EQ. 1 megohm or 15V).
 Operation at 10% and 90% points (0-100 counts per second).
 Minimum of 2 milliseconds at 500 ohms or 1.5V.
 Minimum of 7.5 milliseconds at 50 kilohms or 13.5V.
 High speed input (0-7.5K counts per second).
 Minimum of 20 microseconds at 0 ohms or 0.1V.
 Minimum of 110 microseconds at 1 megohm or 15V.
 Operation at 10% and 90% points (0 - 5K counts per second).
 Minimum of 45 microseconds at 500 ohms or 1.5V.
 Minimum of 160 microseconds at 50 kilohms or 13.5V.
 Count invert: Counts are normally entered as the contact closes. This operation can be inverted by rear panel selection, so that the count is entered as the contact opens.

CONTACT OUTPUT(Two "Form C" (SPDT) Relay Contacts)

The relay will change state within 20 milliseconds after coincidence.

Contact rating: 240VAC, 2 amperes, 80% power factor.
 Breakdown voltage: 500VAC between open contacts, 1500VAC between all other insulated points.
 Normal and reverse relay operation — user programmable.

RELAY OPERATING MODES (User Programmable)

Time out: 50 milliseconds relay operation. The time out can be increased to 10 seconds by adding a series resistor between time out terminal and + 15VDC terminal.
 Unlatch: Relay will remain latched until remote contact is closed to ground.
 Latch until reset complete. Relay will remain latched until front panel or remote reset switch is closed and released.

AUXILIARY POWER OUTPUT

15VDC at 100 ma.

COUNTER RESET(Reset always overrides count input.)

Manual reset switch on front panel.
 Remote reset terminal on rear of unit.
 Automatic reset user programmable.
 Resets to zero in up count mode and to preset number in down count mode.

GENERAL

5 digits of predetermining selection and display.
 Seven segment, .3" LED displays.
 Up or down counting user programmable.

Ordering Information

The Series 1800 count/control has all operational modes built into a single model. Therefore when ordering, request Model number **1800-511**.

SERIES 1900 DUAL LEVEL COUNT / CONTROL



1900-512-P

The Durant Series 1900 is an all-solid state, two level predetermined count/control. It is the most versatile control of its type available and the product of a decade of innovative engineering experience and electronic control manufacturing know-how. The Series 1900 can be quickly and simply programmed, by the user, to suit the exact control requirements needed for most applications. Options include: various reset and/or recycle modes — including time delay, output control relay flexibility, input count mode selectability (either count up, down or bi-directional input). Input power is either 12-30VDC or 120VAC. All of these options are selectable in each Standard Series 1900 count/control via a DIP selector switch or simple wire changes to a terminal block located at the rear of the unit.

Design features include reliable CMOS noise immune circuitry, brilliant .3" high LED readout, and Bi-directional pushbutton predetermined count selection for fast, easy operation. Replaceable output relays, which are externally accessible, can be changed in seconds. The Series 1900 is designed for a wide variety of industrial count/control and instrumentation applications such as: coil winding, length measurement and cut-off, batch or cycle control, test equipment, scaling, plus controlling other types of production operations.

Specifications:

POWER REQUIREMENTS

Normal Power Input
120VAC (+10% -20%) 50/60 Hz

DC Power Input
12-30 VDC
175 ma typical, 275 ma maximum current drain

Standby Battery (Display Extinguished) @ 12VDC

COUNT INPUTS

Operating Modes
Add/Subtract — separate count inputs
Add/Subtract — common count input
Bi-directional
Input doubler

Operating Speeds
High speed (to 5K Hz)
Minimum "LOW" time; 25 microseconds
Minimum "HIGH" time; 175 microseconds
Low speed (to 150 Hz)
Minimum "LOW" time; 1 millisecond
Minimum "HIGH" time; 5 milliseconds

CONTROL OUTPUT

One Form C set of relay contacts for each level, rated at

5 amps typical, 7.5 amps maximum at 120 VAC or 28 VDC.
(Resistive Load) or solid state transistor output 28 VDC
@ 100 ma.

Relay operating modes
Time Out 50 milliseconds to 10 seconds
Latch until external contact closure
Unlatch Level A at Level B
Unlatch Level B at Level A

RECYCLE OPERATING

Manual — Front Panel
Remote — External contact closure
Automatic
Reset/Preset

BYPASS

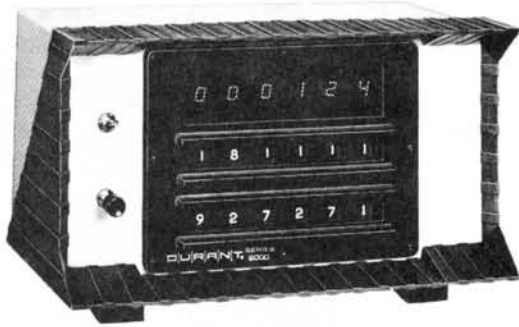
In the Bypass mode, all Level A functions (output, recycle, and unlatch) are disabled.

PHYSICAL

Display .300 inch high LED display
Bi-Direction predetermined pushbutton selector switches
Terminals: Screw type

Ordering Information:

The Series 1900 has all operational modes built into a single model. Therefore, when ordering, request: Model Number 1900-512-P.



2000-621-D

**SERIES 2000
SINGLE or DUAL LEVEL
COUNT / CONTROL**

The Durant Series 2000 electronic count/control features modular construction for economical design flexibility. Available with either one or two independent levels of predetermining, two thru six digits of control, plus numerous input and output options. High signal circuitry assures maximum industrial noise immunity to insure accurate count. Brilliant solid state light emitting diode display is easy to read even under adverse light conditions.

Predetermined count settings are selected with bi-directional pushbutton switches—one button to add, the other to subtract. The switch features large easy to read numbers set close to sealed windows for wide angle visibility. Precious metal switch contacts insure maximum reliability in industrial environments.

Standard options available are: desk or panel mounted units, transistor output, crop cut. Additional options include count totalizer, batch or cycle counting. A broad variety of Durant count input transducers complement the Series 2000 count control.

Specifications:

POWER REQUIREMENTS:

- 120 VAC ± 10% 50-60 Hz — 35 watts maximum.
- 240 VAC ± 10% 50-60 Hz (optional).

LOW SPEED INPUT: 0 to 150 counts per second

- Minimum contact closure time: 1 MSec.
- Minimum contact open time: 5 MSecs.
- Required switch ratings: 15 ma @ 15 VDC

HIGH SPEED INPUT: 0 to 20K Hz

Counts on increasing or decreasing resistance or voltage: Decreasing input must be; "High" a minimum of 40 microseconds, "Low" a minimum of 10 microseconds.

Increasing voltage or resistance must be; "High" a minimum of 10 microseconds, "Low" a minimum of 40 microseconds.

OUTPUTS: Two SPDT (form C) contacts for each level of predetermining. 10 Amp non-inductive @ 120 VAC.

RELAY ACTUATE TIME: 15 milliseconds after coincidence.

RELAY HOLD TIME: 100 milliseconds (±20 milliseconds)

Note: Latch until reset and latch until customer contact closure or opening can be programmed at the rear terminals.

Relay hold time can be increased up to 10 seconds by adding an external resistor.

TRANSISTOR OUTPUT: A transistor output instead of relay contacts at coincidence is available as a standard option. Transistor rating 150 ma @ 24 VDC.

RESET: Front panel switch or remote switch (SPST switch). Reset Time 15 microseconds.

AUTOMATIC RECYCLE: Either predetermining level can be programmed to reset the count to zero for automatic recycle applications. Maximum count speed is not affected by operating in this mode.

NUMBER OF DIGITS: Two to six digits, with one or two levels of predetermining.

DISPLAYS: Light emitting diodes.

Note: Displays are completely independent circuit functions.

PREDETERMINING SELECTION: Bi-Directional Push Button Selector Switches. Figure size .220" x .170".

Ordering Information:

To select the correct model number for your application, determine designation for: Number of figures, levels of pre-

determined count/control, type of mounting, and voltage.

EXAMPLE:

2000 — 4 1 1 — P — 120/60

BASE NUMBER

NUMBER OF FIGURES

LEVELS OF PREDETERMINING

TYPES OF MOUNTING

VOLTAGE

- 2 — two figure
- 3 — three figure
- 4 — four figure
- 5 — five figure
- 6 — six figure

- 1 — one level
- 2 — two level

- D — desk mount
- P — panel mount
- S — splashproof
- E — steel cover

- 120 VAC, 50/60 Hz
- 240 VAC, 50/60 Hz

SERIES 3801 SINGLE PRESET COUNT / CONTROL



3801-413

The Series 3801-413 is a four figure, predetermined electronic count/control. The unit features two outputs: a transistor turns "ON" nine counts before zero, and a relay actuates at zero. The unit features compact size, panel mounting, pushbutton preset ease, and automatic or manual reset to preset operation. To operate the Series 3801, a predetermined count is set on bi-directional switches located on the front of the unit. After reset, a green LED light indicates the unit is ready to accept counts for an operation cycle. The light goes off after the first count. The outputs remain latched until the control is reset or for .15 seconds as selected. Because of its solid state construction, the Series 3801 is ideal for applications such as: measuring and dispensing pumps, batch packaging, printing press and bindary control, copier and reproduction equipment, and other rapid recycle batching operations.

Specifications:

GENERAL

4 figures of preset.
Prewarm at 9 counts before 0.
Green LED indicator lit when unit is reset, turns off when first count is entered.
Operating Temperature: -18°C to $+50^{\circ}\text{C}$.
Storage Temperature: -40°C to $+75^{\circ}\text{C}$.

POWER REQUIREMENTS

DC Voltage Input +14.0V minimum to +26.5V maximum, tolerance includes regulation and ripple.
Current: 65 ma maximum.

OUTPUT

PREWARN

Open collector NPN transistor with a 30 volt Zener diode for protection. Current sink capability is 100 ma. during prewarn time.

COINCIDENCE

Single Form C relay. Maximum current is .5 amp at 120VAC.

COUNT

1. Maximum count rate is 150 counts per second obtainable with the following input switching conditions:
 - A. Minimum of 1 ms contact closure ($5\ \Omega$ or $< .1\text{V}$ pulldown).
 - B. Minimum of 5.5 ms contact open (1 megohm or $> 15\text{V}$).

CONTROL

Count and preset input devices must be rated for 15V at 17 ma minimum, external transistor or contact closure to common.

RESET

Not less than .01 SEC., (Must end not less than .02 SEC. before the first count.)

AUTO RECYCLE

Counter will automatically reset and begin new cycle when Auto Recycle control line is connected to Common. .15 second Relay Time Out must be used with Auto Recycle.

OUTPUT RELAY TIME OUT

Output relay will actuate for:

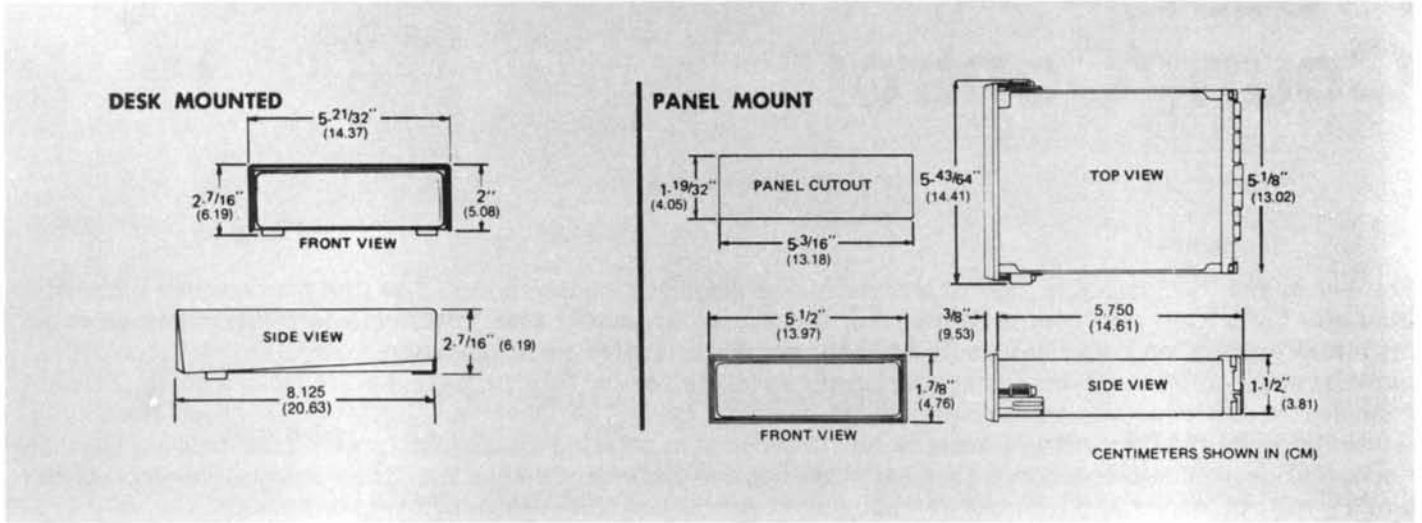
1. 0.150 seconds with Time Out Control line connected to common.
2. Until control is reset when Time Out Control line is not connected.

Ordering Information:

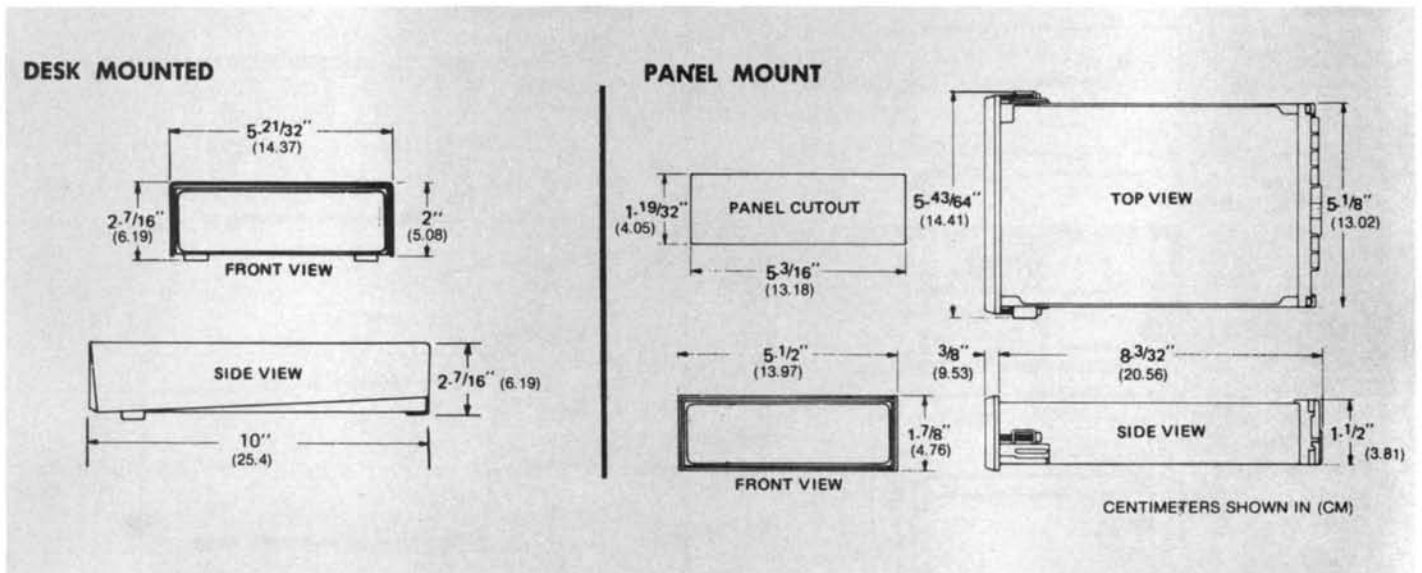
The Series 3801 has all operational modes in a single model. Therefore, when ordering, request **Model 3801-413**.

DIMENSIONS ELECTRONIC COUNT CONTROL

Series 100

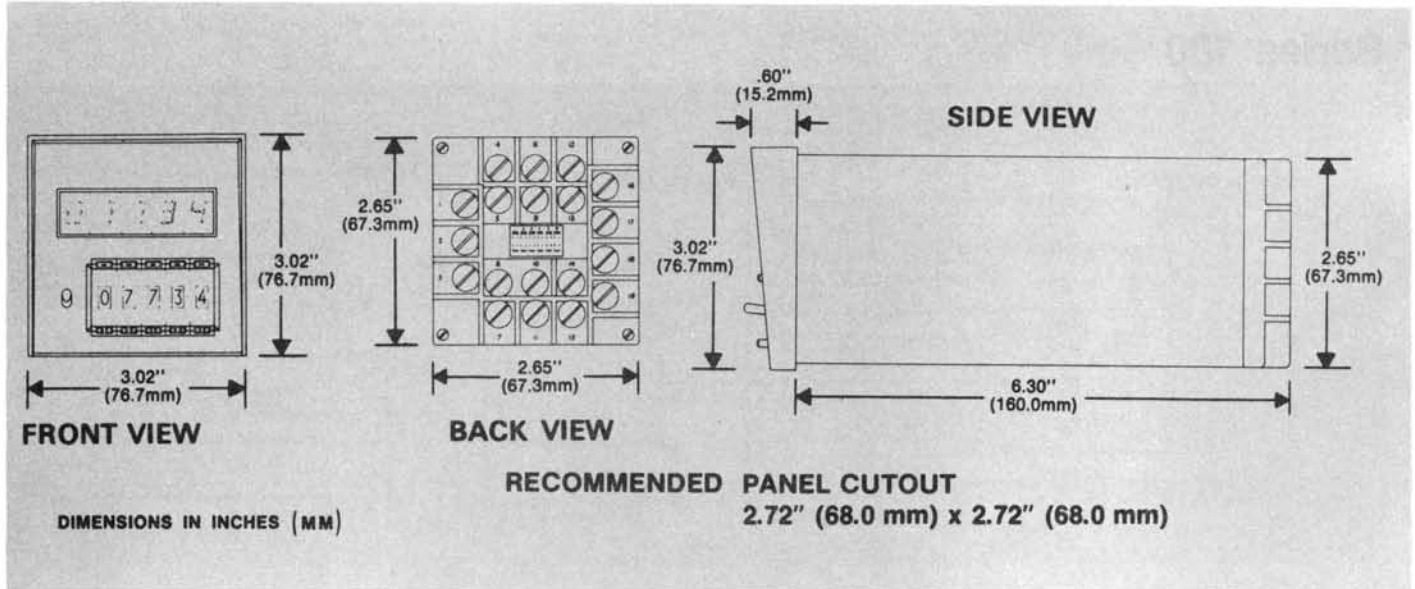


Series 1700



DIMENSIONS ELECTRONIC COUNT / CONTROL

Series 1800



Series 1900

