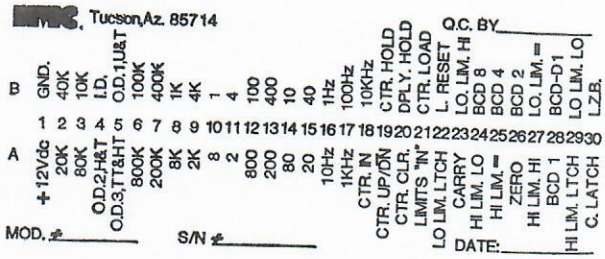
MODELS
817
819
811
813

UP/DOWN CLOCKS-CONTROLLERS With Dual Limits

FEATURES

- 11:59:59 (12 Hour Format) 817
- 23:59:59 (24 Hour Format) 819
- 59:59.99 (60 Minute Format) 811
- 99:59:59 (100 Hour Format) 813
- Up/Down CMOS Counter
- 6 Full 1/2" (13 mm) Display
- 3T BCD TTL or CMOS
- Schmitt Trigger/Debouncer
- Relay Outputs
- Splash Proof Cover
- 1/4" DIN Aluminum Case
- Dual Limits for "High-in-Low" Operation



DESCRIPTION

Four different models featuring dual limits are available using the 810 main frame. All the flexibility and features of the 810 main frame remain (see pages 9 to 11) plus the added power of the individual models. All models on this series feature dual limits for "Over-in-Under" detection and control of process. Since there are only two sets of Thumbwheel Switches available, the starting time can be set in the following modes: (See Models 807 and 809 for preset capabilities.)

1. Always start at zero 2. Use the Internal Time Base to advance the clock to the desired starting time by means of an external position switch 3. Use external variable time base (NE555 clock is OK) 4. Contact the factory for external Thumbwheel Switch Setting Option (3T BCD must be deleted).

Logic, Relay and BCD Output Interfaces these models to the real word for controlling purposes.

CONNECTIONS

Since these models use the 810 Main Frame, all connections remain the same (see 810 Model). These models have available five time bases at the rear connector 10 KHz (18B), 1 KHz (17A), 100 Hz (17B), 10Hz (16A) and 1 Hz (16B). Any of these can be externally connected to counter input (18A) to advance the clock to the desired set time, if other than 000000. To use the format (display) properly, the 100 Hz (17B) must be connected to 18A for Model 811 (10mS Resolution 59:59.99) and the 1Hz (16B) should be connected to 18A for Models 817 (11:59:59), 819 (23:59:59) and 813 (99:59:59). These, as well as other models in this series, can be used as *DOWN CLOCKS* by simply grounding the Up/Down Control (19A).

ORDERING INFORMATION

MODEL XXX X X X

MODEL FORMAT
817 . . . . 11:59:59
819 . . . . 23:59:59
811 . . . . 59:59.99
813 . . . . 99:59:59

BCD
0 . . . . No. BCD
1 . . . . TTL BCD
2 . . . . CMOS BCD

0 . . . . Standard

POWER SUPPLY/RELAYS
0. . . . No. Power Supply (12 Vdc only)
1. . . . 12 Vdc and Relays
2. . . . A.C. Power Only (115/230 Vac)
3. . . . A.C. Power and Relays
4. . . . 12 Vdc and Triacs
5. . . . A.C. Power and Triacs
X. . . . Special (Specify)

SPECIFICATIONS

- Input Frequency ..... dc to .5MHz
- Input Level .... CMOS Logic "0" =< .3V, Logic "1" => 6V
- Count Pulse Width ..... 400μs Min.
- Hold Pulse Width ..... 3μs Min.
- Reset Pulse Width ..... 3μs Min.
- Up/Down Setup Time ..... 1μs Min.
- Inputs Source Current ..... 250μA Nominal
- Zero Pulse Width ..... 5μs Min.
- Carry Pulse Width ..... 5μs Min.
- Power Requirements ..... 12Vdc ± 10% @ 150mA
- Operating Temperature ..... 0 to + 60° C
- Storage Temperature ..... -20 to +80° C

Notes: Limited to 200 Khz when using BCD Output or Limit Output.

INPUT DEBOUNCER

Input Source Current 750μA
Input Capacitance 5pF
Input-Output Delay ..... 4 Clock Pulses after Last Bounce
Clock Frequency Vs Cx (internal) ..... f=A/Cx.
A = 1/3 Vcc. Cx in pF, Ex 50000 pF = 40 mS Delay

LIMITS:

Output Logic Level ..... "0"<3V; "1",>6V
Propagation Delay 1μs
Latch Reset ..... >1μs
Latch Reset Source current 250μA

POWER SUPPLY

Input ..... 115/230 VAC ± 15% 50-60 Hz
Output ..... 12Vdc ± 10% @ 200mA

RELAYS/TRIACS

Make Time 3.0mS/.1mS
Break Time 1.0mS/.1mS
Maximum Load ..... 1A Resistive

TRISTATE BCD

Output (CMOS) ..... CMOS Compatible
Output (TTL) ..... LPTTL 10 Loads
Output Format ..... 8 Bit (2 Digits) or 24 Bit (6 Digits)
Input Disable ..... All Six Digits (memory)
Output Disable ..... 3, Grouped in 2 Digits

See page 29 for Mechanical Specifications.