PREDETERMINE, PRESETABLE, QUADRATURE Input Up/Down Counter, Timer, Clock with RS232/422

MODEL 270

WITH PRESETS

Features
- Presetable
- Digital Limit with Relays
- 1/8 DIN & NEMA Compatible Cut Out
- Quadrature Detector
- Datum Zero
- Tristate Parallel BCD
- Tristate Par. BCD Optoisolated
- Zero Detect
- Built-in Excitation Source Isolated
- 6 Power Input Options
- RS-232C/422
- MTBFC: 100,000 Hours

WITHOUT PRESETS

DESCRIPTION: The Series **270** is a versatile instrument offering Otek's pioneered plug-in modular concept for DPMs. A single mainframe is used to cover most applications. Plug-in optional boards are used to allow factory or field upgrading of the instrument. This means long design life and avoids obsolescence.

MAINFRAME: Four full decades of high intensity LEDs, single I.C. and a power supply are contained on the mother board. The I.C. is on a socket for easy field replacement.

RELAYS: For "zero" and "equal" outputs (either latched or non-latched) relays are also included on the mainframe.

CONNECTIONS: Connections are made through an easy to wire two piece plug-in screw type connector. There is no need to solder or remove wires for servicing.

CASE: U.L. approved ABS Polycarbonate 94VO rated. Meets 1/8 DIN and NEMA panel cut out requirements.

DECIMAL POINTS: Jumper selectable are conveniently located behind the filter.

TECHNICAL INFORMATION

COUNTER: Since the basic unit is an up/down counter, it is the common denominator for all the options. Please refer to the appropriate options for additional technical information. The **270** is a single I.C. four digit up/down counter with a schmitt trigger at its count input. Its up/down control is synchronous to eliminate mistriggering. The maximum guaranteed input frequency is 2MHz (see options).

DISPLAYS: Two types are available, a four decade type for counting and timing (9.9.9.9.) and a clock type for clocks (59:59).
Decimal Point is selected behind the bezel and filter.

PRESETS: This option consists of two sets of built-in front panel accessible thumbwheel switches for presetting the counter at any number and setting the digital limit as well. They are the dynamic type (meaning that no information is accepted unless the "counter load" and/or "limit load" front panel push buttons are depressed).

The thumbwheel switches require a small object such as the tip of a pen to change the setting, preventing unintentional changes. Select toggle switch for appropriate preset and push corresponding load switch.
Note: Presets are not affected by polarity, they are *Absolute Value Type.*

RS-232C/422: Up to 32 stations, baud rates of 150-19,200, (see Section 7, Model A81-2790 for details).

SECTION I

RELAYS for "zero" and "equal" are available and they can be set for latched or non-latched (pulsed) operation at Otek or in the field. The relays are normally wired for normally open (NO) operation for fail safe function. They are SPST. See ordering information.

OPTIONS 1 & 2 **NON-LATCH** (Use JP10) In this mode the relay(s) will only be "on" for the duration of the complete cycle of *two* "equal" or "zero" pulses. The first will turn it "on" and the second will turn it "off" if the counter is allowed to free run. Max. frequency input is 50KHz.

OPTIONS 3 & 4 **LATCHED RELAYS** (Use JP9) In this mode when either equal or zero is detected, the relay(s) will latch and remain latched until the internal (push button) or the external reset line is grounded. Counter is also cleared when relay(s) is/are reset.

NOTE: When internal excitation is ordered, no "zero" relay is available (terminals are used to have excitation output at connector).

SECTION II

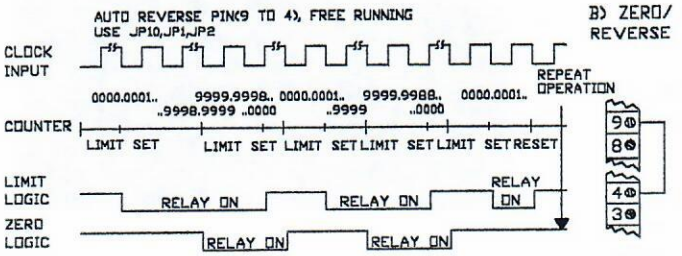
FUNCTIONAL DESCRIPTION OF STANDARD FEATURES
Note: Any of the following modes of operation can be easily accomplished by external jumpers at the screw connector and internal plug-in shorting bars (no soldering is required).

TYPICAL FUNCTIONS AND CONNECTIONS

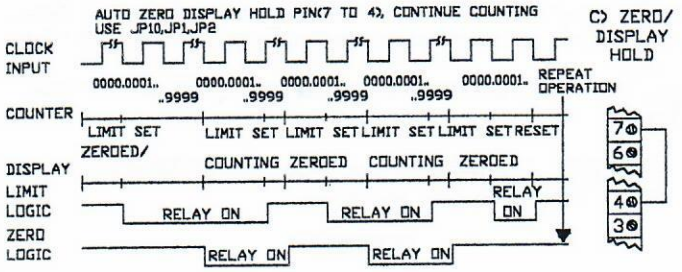
II.1 AUTO ZERO FUNCTIONS (Use JP10 non-latch model)

Connect Pin 4 to: ( )

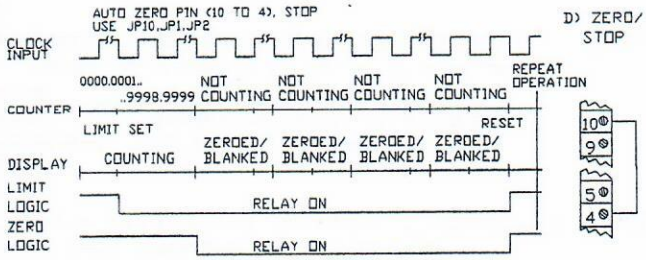
(PIN 9) AUTO ZERO-REVERSE - (Free Running) The 270 will count up to "0" (9999+) and reverse its direction (down) to "0" and back up, etc. The zero latch output and relay (if ordered) will flip-flop every cycle. (50%) push to reset to stop/start.



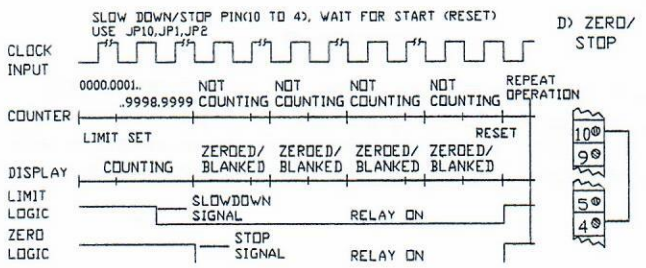
(PIN 7) AUTO ZERO-DISPLAY-HOLD (Free Running) The 270 will detect "0" and hold the display but will continue counting. The display will be counting only when the zero light and relay is on (50% of the time). During the 1st cycle, the display will be at zero.



(PIN 10) AUTO ZERO-STOP The 270 will count Up or Down to "0" and will stop. To start a new cycle, push the reset button or ground Pin 15.



(PIN 10) SLOW DOWN-STOP ***Presets Must Be Ordered*** The 270 will count up or down to the limit. The limit relay will switch (slow down signal) and continue counting, when it reaches "0" it will stop (stop signal) and wait for a new cycle. To start, push the reset button.

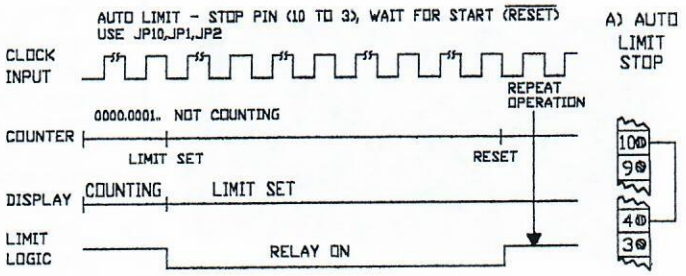


II.2 AUTO LIMIT FUNCTIONS

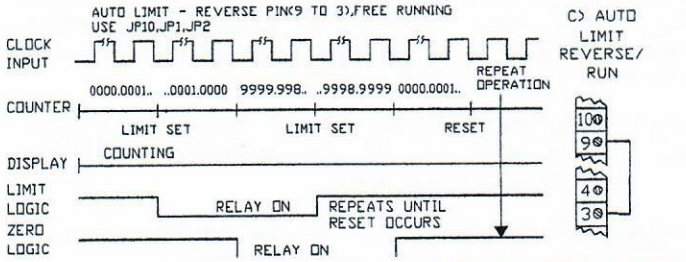
(Use JP10, available with presets)

Connect Pin 3 To: ( )

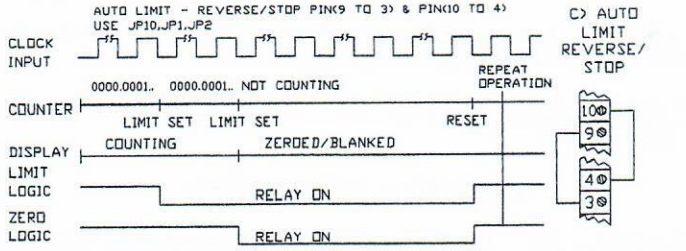
(PIN 10) AUTO LIMIT-STOP The 270 will count up or down to the limit and stop. Push reset button or ground Pin 15 to start a new cycle.



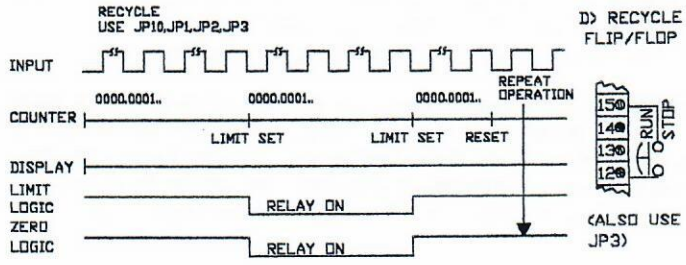
(PIN 9) AUTO LIMIT REVERSE - (Free Running) The 270 will count up to the limit, down thru zero to the limit and so on. The limit latch (or relay) will switch every time the limit is detected and the zero latch (or relay) will switch every time the zero is detected. To stop it, ground (Logic "0") counter hold or reset.



(PIN 9) (ALSO CONNECT PIN 4 TO PIN 10) AUTO LIMIT-REVERSE with stop at zero. The 270 will count up to the limit, reverse direction (limit latch and relay will switch) down to zero and stop (zero latch and relay will switch). To start a new cycle, reset it.



RECYCLE (FLIP-FLOP) *50% Duty Cycle (Must use JP3 also).* The 270 will count up to the limit and reset to zero, (zero latch and relay will switch) up to the limit again and reset, etc. The zero relay and logic will switch at 50% on and 50% off. To stop, ground Pin 15 or push reset button. No external jumpers are required.



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