

# New Product News

Electronic and tone oriented equipment for all phases of today's telecommunications

## M-487-01 KTU/OPX

### The Product

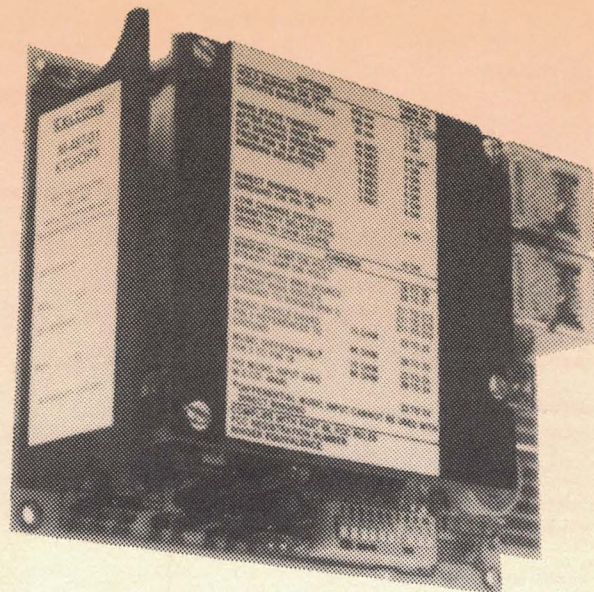
The M-487 is a combination line KTU (similar to 400 and 1400 series line KTU's) **with** off-premises supervision control to eliminate a control pair of wires in OPX applications (similar to the Teltone M-486). The unit extends Teltone's offering of products aimed at copper pair and labor reduction.

The M-487 KTU/OPX was designed to be extremely flexible. It is compatible with, and may directly replace, most line KTU's available today. In addition, the M-487 is designed to adapt to all standard Central Office timing requirements. Music-on-hold is a standard M-487 offering.

No external wiring is necessary, simply select correct options with D.I.P. switch and supplied jumpers and plug in card.

### Standard Features

- Eliminates the need for a control pair of wires to automatically remove a hold condition by an OPX telephone set that was held by the key telephone.
- Physically identical to existing 400 and 1400 series line KTU's.
- Music-on-hold.
- Built in selector switches and option straps to ensure compatibility with C.O. timing requirements and most line KTU's currently available.



- Busy/idle indicator L.E.D.
- Does not supply signaling voltages. Up to 20 lamps and 5 ringers can be used.
- May be used with bridge and mini-bridge lifters.

### Summary of Specifications

- Size: H 3-1/2" x L 5-1/4" x W 1-3/8"
- 18-pin (complies with existing 1A, 10A type wire arrangements)

(continued on reverse)

FCC Registration Number **AHH9WA-69272-KX-N**  
Ringer Equivalence Number **1.0B**

Iss. 3 3/3/81

**TEL TONE**

TCI Library: [www.telephonecollectors.info](http://www.telephonecollectors.info)

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**SPECIFICATIONS****Input Signal Requirements**

D.C. Input impedance	60 M ohm from Tip or Ring to ground, minimum
Off-hook recognition (off-premises phone)	Less than 1/2 sec
On-hook recognition (off-premises phone)	Less than 1/2 sec
Ringing voltage blocking	150 VRMS maximum 15 to 70 Hz
Allowable noise level—longitudinally induced 60 Hz voltage	56 V p-p maximum unterminated, Tip or Ring to ground

**Interface Requirements**

Inserted line resistance	3 ohms maximum
Forward loop current recognition	22 A minimum
Reverse loop current recognition	22 mA minimum
Off-hook recognition (key system phone)	Less than 1/2 sec
On-hook recognition (key system phone)	Less than 1/2 sec
Insertion loss	0.5 dB maximum

Common mode rejection

20 VRMS,  
56 V p/p  
on T/R**KTU Section**

Music-on-hold	Balanced or grounded (single lead) input selectable
Interrupter start (relay loop closure)	AC and DC
Hold release	20 ms, 140 ms or 470 ms selectable)
Hold impedance	Line variable
Hold lamp	Steady or wink (selectable)
OPX on hold	All conditions
Ringing signal	Ground, interrupted or steady
Direct ring	Bridged or single input (pin no. 18 grounded)
Lamp relay rating	20 lamps (approximately 2 amps)
Ringer relay	5 ringer loads
Polarity reversal	Yes on dry circuits (selectable)
Lightning protection	Standard
Bridge and mini-bridge lifters	Allow operation (1300 ohms max)
Loop length maximum	1400 ohms max

**Combined M-487 Electrical Characteristics****Power requirements**

Central office voltage	-44 to -56 VDC
Key system supply voltage	-18 to -28 VDC
M-487 supply current	
idle	30 mA maximum
busy state	80 mA maximum
hold or ring state	80 mA maximum
-15V on card regulator	-15.0 ± 0.75 VDC

**Note:** C.O. ground cannot be more than 1 VDC more positive or more than 2 VDC more negative than the M-487 ground for the M-487 to work correctly under the longest loop conditions.

**Timing requirements**

Ring detect (greater than 40 VRMS Tip to Ring)	350 ms ± 100 ms
Ring time-out	selectable 3 to 30 seconds
Hold survive time on dry circuits	selectable 21 to 470 ms

**KTU phone**

A-lead ground detect	50 ms ± 10 ms
A-lead ground removal detect	50 ms ± 10 ms

**OPX/KTU**

Longitudinal balance	Hold greater than 60 dB; off hold greater than 75 dB
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