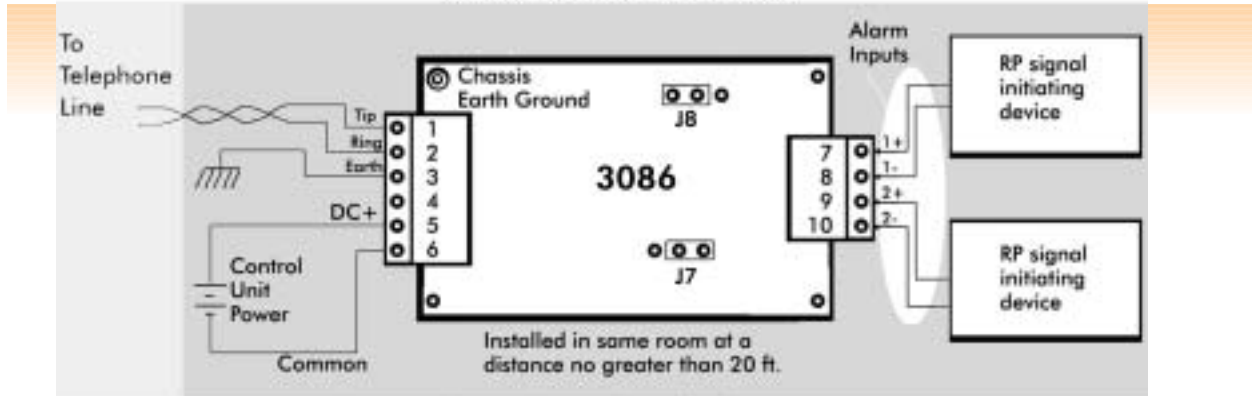


**3086 TTM-RP  
 Tones Transmitter Module  
 Polarity Reversal Inputs**



**Wiring Diagram**  
 All circuits are power limited



Notes: 1) Use 18 AWG UL-listed wire.  
 2) Jumpers J8 and J7 are shown in Enable mode.

**General**

3086 TTM (Tones Transmitter Module) is a unit that accepts reversing polarity (RP) signals and transmits tones. This manual describes the installation of the TTM. The 3086 TTM is intended for connection to a polarity reversal circuit of a control unit at the protected premises having compatible ratings.

**Installation**

Connect the positive side of a 10-30 VDC Class 2 or Class 3 power limited source of supply to pin 5, and the negative side to pin 6. Note that pin 6 is not an earth ground.

Connect pins 1 and 2 to a 600 ohm telephone line.

These lines are electrically isolated from the main circuit of the TTM. These pins are interchangeable. Pin 3 is the earth ground. Connect either this pin or the conductive mounting hole to an earth ground.

Pins 7, 8, 9, and 10 are RP inputs. These inputs are opto-isolated and require 8V/2mA minimum to drive. Connect these to the alarm signal initiating devices, carefully observing the polarities. If only a single zone is used, then the unused side must be disabled by moving a jumper on the PC board. J8 disables the ALARM 1 zone and J7 the ALARM 2 zone. TTM boards are shipped from the factory with both zone jumpers installed in the enable position.

3086 Pin description			
Pin #	Name	Type	Description
1	Tip	Output	Connects to one side of the telephone line
2	Ring	Output	Connects to the other side of the telephone line
3	Earth	Input	Earth ground
4			No connection
5	DC+	Input	Positive 10 - 30 volts DC power input
6	Common	Input	Negative DC power input
7	Alarm1+	Input	First zone RP input (positive when Secure)
8	Alarm1-	Input	First zone RP input (negative when Secure)
9	Alarm2+	Input	Second zone RP input (positive when Secure)
10	Alarm2-	Input	Second zone RP input (negative when Secure)

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**INTERFACE REQUIREMENTS**

The TTM responds to reversals of voltage. An input pair is isolated and is designed to operate on voltage differentials. The TTM can be connected to third party equipment with RP outputs provided they satisfy the following requirements.

First, at least 8 volts differential in either direction is required in order for the TTM to distinguish the polarity. In other words, ALARM+ must be at least 8 volts higher than ALARM- in order to cause the TTM to generate a SECURE tone and ALARM- must be at least 8 volts higher than ALARM+ for ALARM. On the higher end, the voltage differential must not exceed 32 volts. As for the current, the actuating equipment must be capable of supplying at least 2mA.

**SUPERVISION**

The first zone fully supervises an alarm input. Absence of voltage between pins 7 and 8 causes the tone output from pins 1 and 2 to shut off.

The second zone performs differently. The absence of voltage between pin 9 and 10 causes an ALARM tone. In other words, TROUBLE on zone 2 is treated as ALARM on zone 2. Please note that TROUBLE on zone 1 blocks transmission of ALARM on zone 2. The TTM itself is a supervised unit. This is because if the TTM loses power or the communication line gets cut, then the receiving end will experience a loss of tones.

A possible compromise attempt will result in a trouble condition which should be treated as an alarm condition. When used for police connect basic line security, the cover of the conduit box must be tamper switch protected.

**3086 SPECIFICATIONS**

Connection	Terminal lugs	Capacity	Two inputs
Min supply Voltage	10	Communication medium	Two wire Telco - 2000 series or Twisted Pair direct line, 3000 series phone line compatible unit also available
Max Supply Voltage	30	Communication method	Freq. Mod.
Supply Current	7.5mA @ 12v DC	Frequency range	600Hz-1700Hz
RP (input)		Environmental	
Number of inputs	2	Operating temperature	0 to 49 degrees C
Number of wires	4	Storage temperature	-25 to 70 degrees C
Voltage range	DC 8V MIN,32V MAX	Relative Humidity	Non-condensing 20 to 85%
Current	2mA MIN	Dimensions (L x W x H)	
Isolation	Opto-isolated	3086 (PC board)	4.0" x 2.5" x 1.0"
Tone (output)		TBX1 (enclosure)	5.0" x 4.7" x 1.7"
Level	-6dB (0 dBm = 1mW)	Weight	
Impedance	600 ohms	3086 (PC board)	0.13 lb
Other features	Isolation and lightning protection	TBX1 (enclosure)	0.52 lb
States	Alarm, Secure, Trouble		
Input supervision	Refer to text		

**NOTES:**

1. TTM unit is comprised of a TBX1 Enclosure and a 95M3086 Printed Circuit Board
2. TTM is compatible with TRM Receiver Module.
3. Conduit connection is required. The U.L.listed conduit boxes are:

Hoffman  
 A-SE6x6x4 (screw cover)  
 A-SE6x6x3 (hinged cover)

Wiegmann  
 SC664 (screw cover)  
 A663 (hinged cover)

