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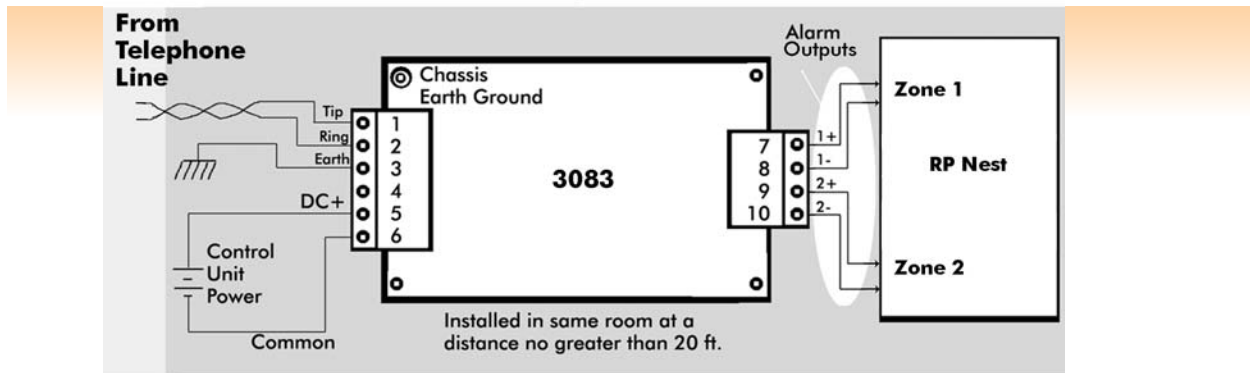
Datasheet



**3083 TRM-RP
 Tones Receiver Module
 Polarity Reversal Inputs**



Wiring Diagram
 All circuits are power limited



Notes: 1) Use 18 AWG UL-listed wire.

General

The Tones Pair is a system that utilizes audible tones to communicate discrete alarm conditions over a distance. This scheme was developed for the purpose of allowing the continued use of Reverse Polarity (RP) and dry contact alarm equipment over leased telephone lines that no longer support DC signal transmissions.

The Tones Pair consists of a Tones Transmitter Module (TTM) installed at the protected premises and a Tones Receiver Module (TRM) installed at the central station. The TTM accepts tones and converts them back into RP signals.

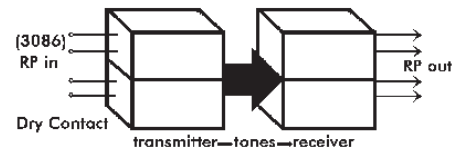
The 3083 TRM-RP is intended for connection to a polarity reversal input circuit of a receiving unit having compatible ratings.

Installation

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

Connect pins 1 and 3 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

3083 Pin description			
Pin #	Name	Type	Description
1	Tip	Input	Connects to one side of the telephone line
2	Ring	Input	Connects to the other side of the telephone line
3	Earth	Input	Earth ground
4			No connection
5	DC+	Input	Positive 10 - 24 volts DC power input
6	Common	Input	Negative DC power input
7	Alarm1+	Output	First zone RP output (positive during Secure)
8	Alarm1-	Output	First zone RP output (negative during Secure)
9	Alarm2+	Output	Second zone RP output (positive during Secure)
10	Alarm2-	Output	Second zone RP output (negative during Secure)



Keltron develops and manufactures secure, reliable, UL-listed fire and security alarm response management systems and components for the municipal and proprietary life safety markets. Products include radio fire alarm, coded fire alarm and high-line security systems, digital alarm receivers, universally compatible fire alarm control panel networking solutions and a full line of alarm annunciators. For more information, visit www.keltroncorp.com or contact us at 781-894-8710, or info@keltroncorp.com.

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INTERFACE REQUIREMENTS

3083 TRM outputs are designed to interface to polarity reversal monitoring equipment such as Keltron's 2880. The 2880 satisfies all compatibility requirements that will be discussed in detail shortly. Pins 7 and 8 of the TRM constitute a pair and 9 and 10 another pair. The TRM accomplishes the reversing of voltages by raising one line of the pair to 5 volts while holding down the other to 0 volts and doing the opposite for a different state. Therefore, it is mandatory that the RP inputs of the driven equipment be floating e.g. 2880.

When the two zones are used, the second input of the monitoring equipment must be isolated from the first as well as from the TRM.

TRM output voltage differential is 5 volts at no load and decreases as the load becomes heavier, at an approximate rate of half a volt per milliampere. One must make sure that this satisfies the input voltage and current requirements of the driven equipment.

SUPERVISION

The TRM supervises a Tones Transmitter. When Pins 1 and 2 lose tones, all RP output pins (namely 7, 8, 9, and 10) drop to zero volts, which should be interpreted as "TROUBLE".

The TRM is supervised in the sense that when the TRM itself loses power, all output voltages disappear. A possible compromise attempt will result in a trouble condition which should be treated as an alarm condition.

THEORY OF OPERATION

A tones pair handles up to two independent inputs named ALARM 1 and ALARM 2. Each input may be used for a number of applications including monitoring of intrusion, burg, hold-up, panic, fire, medical emergency, and non-critical industrial processes.

The TTM transmits four different types of tones for each of the four different states the RP inputs can assume. That is, (1) both zones Secure, (2) ALARM 1 but no ALARM 2, (3) ALARM 2 but no ALARM 1, and (4) both ALARM 1 and ALARM 2. The TRM decodes the tone and changes its RP output in a manner that reflects the voltages applied to the RP inputs on the TTM.

In addition to the above four conditions, there is a fifth condition called Trouble. The TTM sends some kind of tone on all of the above states including "both Secure". The Trouble condition implies either that the TRM did not receive any tones due to the loss of communication between the TRM and TTM, or that the tones received were undecodable. During a Trouble, all four outputs of the TRM drop to zero volts.

A Trouble may also imply that the communication between the alarm actuating equipment and the TTM has been lost. The TTM requires a positive or negative voltage on the first zone RP input for proper operation. Warning: If you are using only a single RP input, then you must either tie the unused inputs to power and ground or install a configuration jumper

3083 SPECIFICATIONS

Connection	Terminal lugs	Supervision	Absence of tones results in Trouble
Min Supply voltage	10	Capacity	Two outputs
Max Supply Voltage	24	Communication medium	Telco direct line (2000 series)
Supply Current	50 mA (typ)	Communication method	Freq. modulation
		Frequency range	600Hz .. 1700Hz
RP (output)		Line Attenuation	10dB (max)
Number of outputs	2	Environmental	
Number of wires	4	Operating temperature	0 to 49°C
Level	0 to 5 volts	Storage temperature	-25 to 70°C
	5V@ no load, decreases	Relative Humidity	Non-condensing 20 to 85%
	0.5V per mA		
Response time	50 ms (Alarm & Secure)		
	150 ms (Trouble)		
		Dimensions (L x W x H)	
Tone (input)		3083 (PC board)	4.0" x 2.5" x 1.0"
Number of wires	2	TBX1 (enclosure)	5.0" x 4.7" x 1.7"
Impedance	600 ohm	Weight	
Level	-26 dBm (min)	3083 (PC board)	0.12 lb
	(0 dBm Δ 1mW @ 600 Ω)	TBX1 (enclosure)	0.52 lb
Isolation	Yes		
Protection	Lightning		
States	Alarm, Secure, Trouble		

NOTES:

1. TRM unit is comprised of a TBX1 Enclosure and a 95M3083 Printed Circuit Board
2. TRM is compatible with TTM transmitter module and the 95DM726 400 zone RP Nest.
3. Conduit connection is required. The U.L.listed conduit boxes are:

Hoffman	Wiegmann
A-SE6x6x4 (screw cover)	SC664 (screw cover)
A-SE6x6x3 (hinged cover)	A663 (hinged cover)

