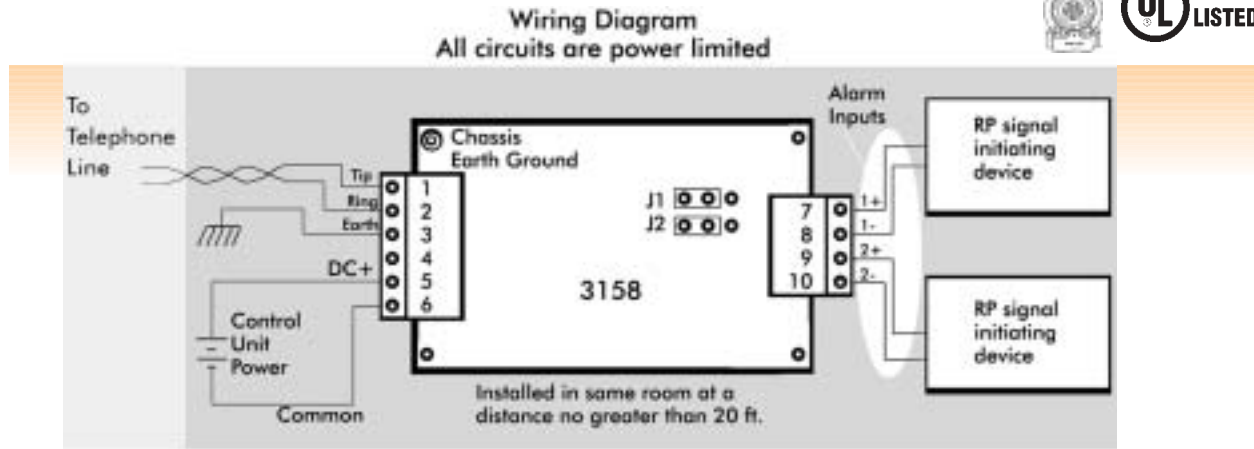


**3158 TTM-RPS
 Tones Transmitter Module
 Polarity Reversal Inputs**



Notes: 1) Use 18 AWG UL-listed wire.
 2) Jumpers J1 and J2 are shown in Enable mode.

General

3158 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 3158 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. J2 disables the ALARM 1 zone and J1 the ALARM 2 zone. TTM boards are shipped from the factory with both zone jumpers installed in the enable position.

3158 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)

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.

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

Both inputs are treated identically. Alarm on either input will be reported independent of the status of the other input. Also, if both inputs are in Alarm, both will be reported. If either input is in Trouble and the other input is in Alarm, the Alarm will be reported correctly but the Trouble will report as Secure. If one input is in Trouble and one is Secure, both are reported as being in Trouble.

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 experiences a loss of tones and both inputs are reported as being in Trouble.

When used for police connect basic line security, the cover of the conduit box must be tamper switch protected.

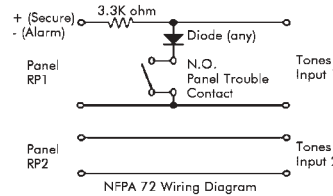
3158 SPECIFICATIONS

Connection	Terminal lugs
Min supply Voltage	10
Max Supply Voltage	30
Supply Current	7.5mA @ 12v DC
RP (input)	
Number of inputs	2
Number of wires	4
Voltage range	DC 8V MIN,32V MAX
Current	2mA MIN
Isolation	Opto-isolated
Tone (output)	
Level	-6dB (0 dBm = 1mW)
Impedance	600 ohms
Other features	Isolation and lightning protection
States	Alarm, Secure, Trouble
Input supervision	Refer to text
Capacity	Two inputs
Communication medium	Two wire Telco - 2000 series or Twisted Pair direct line, 3000 series phone line compatible unit also available
Communication method	Freq. Mod.
Frequency range	600Hz-1700Hz
Environmental	
Operating temperature	0 to 49 degrees C
Storage temperature	-25 to 70 degrees C
Relative Humidity	Non-condensing 20 to 85%
Dimensions (L x W x H)	
3158 (PC board)	4.0" x 2.5" x 1.0"
TBX1 (enclosure)	5.0" x 4.7" x 1.7"
Weight	
3158 (PC board)	0.13 lb
TBX1 (enclosure)	0.52 lb

3158 INSTALLATION ADDENDUM PER NFPA 72

RS/SS/WF Listed FACP interface to 95M3158 (TTM-RPS)

1. Connect the general alarm reverse polarity output from the FACP to the Alarm 1 input of the 3158 but with a series 3.3K ohm resistor in the line to that panel output which is positive when the panel is secure. Connect a diode at the input of the TTM-RPS with its anode connected at the junction of the 3.3K and the TTM input. The cathode of the diode is wired in series with the FACP general trouble contact whose other side is wired to the line between Alarm 1 of the TTM and the panel output which is negative when the panel is secure.
2. Connect the supervisory reverse polarity output from the FACP to the Alarm 2 input of the 3158.



OPERATION:

On full alarm, the alarm reverse polarity output reverses and causes an Alarm 1 conditions at the receiving system.

On a supervisory condition, the supervisory reverse polarity output reverses and causes an Alarm 2 condition at the receiver.

On a trouble condition, the trouble contact closes and shunts the Alarm 1 input of 3158 if, and only if, the panel alarm is in the secure condition. This causes a trouble condition at the receiving system. This is the same indication as a phone line or power loss.

Note that neither general nor supervisory alarm reporting is affected. See the Truth Table below. If panel trouble occurs, it will cause Trouble at the output only if both inputs are secure. If either panel output (TTM input) is in Alarm, that alarm will be reported.

NOTES:

1. TTM unit is comprised of a TBX1 Enclosure and a 95M3158 Printed Circuit Board
2. TTM is compatible with TRM Receiver Module.
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)

Truth Table: 95M3158

IN 1	IN 2	OUT 1	OUT 2
SEC	SEC	SEC	SEC
SEC	TRBL	TRBL	TRBL
SEC	ALM	SEC	ALM
TRBL	SEC	TRBL	TRBL
TRBL	TRBL	TRBL	TRBL
TRBL	ALM	SEC	ALM
ALM	SEC	ALM	SEC
ALM	TRBL	ALM	SEC
ALM	ALM	ALM	ALM

