

**INSTALLATION INSTRUCTIONS
TALKBACK MODULE**

MODEL NUMBER: TBM-101

FCC REGULATIONS:

This equipment complies with Part 68 of the FCC Rules. On the back of this equipment is a label that contains, among other information, the FCC Registration Number and the Ringer Equivalence Number (REN) for this equipment. You must, upon request provide this information to your telephone company.

The REN is also useful to determine the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN'S of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company.

Should the equipment cause harm to the telephone network, the telephone company shall, if possible, notify the customer that temporary discontinuance of service may be required; however, where prior written notice is not possible, the telephone company may temporarily discontinue service without notice, if such action is necessary under the circumstances. The telephone company may make changes in its communication facilities, equipment and operations procedures, where such action is reasonably required in the operation of its business and is not inconsistent with the rules and regulations of the Federal Communications Commission.

Do not attempt to repair or modify this equipment. Repairs to this product will be performed by Wheelock Inc. 273 Branchport Ave, Long Branch, NJ 07740 in accordance with Wheelock Inc.'s published Terms and Conditions of Sale. This equipment should not be used on coin telephone lines. Connection to party line service is subject to state tariffs.

If trouble is experienced, disconnect this equipment from the telephone line to determine if it is causing the malfunction. If the equipment is determined to be malfunctioning, its use shall be discontinued until the problem has been corrected.

APPLICATION INFORMATION:

WARNING: ANY MATERIAL EXTRAPOLATED FROM THIS DOCUMENT OR FROM WHEELOCK MANUALS OR OTHER DOCUMENTS DESCRIBING THE PRODUCT FOR USE IN PROMOTIONAL OR ADVERTISING CLAIMS, OR FOR ANY OTHER USE, INCLUDING DESCRIPTION OF THE PRODUCT'S APPLICATION, OPERATION, INSTALLATION AND TESTING IS USED AT THE SOLE RISK OF THE USER AND WHEELOCK WILL NOT HAVE ANY LIABILITY FOR SUCH USE.

The TBM-101 is a self contained talkback system containing an omni-directional microphone and a preamplifier for talkback. It also contains a 4" speaker and a 1 watt amplifier for one-way voice paging, background music and tone alerting. The TBM-101 is compatible with most EKSU, KSU (1A2) and PABX systems. The TBM-101 may be used in single zone or multi-zone applications.

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Background noise permitting, the TBM-101 will service up to 1000 square feet. See Figure 1 and Chart 1 for relation between noise and maximum reply distance. The direction of speech is controlled by the calling party (at the telephone), to prevent false switching of speech direction due to background noise.

CAUTION: These Devices Are Not Intended For Use In Hazardous Locations As Defined By The National Electrical Code (NEC) And By The National Fire Protection Association (NFPA). Contact Wheelock Inc. for Information On Explosion-Proof Devices Designed For Hazardous Locations.

Figure 1. Talkback Distance Vs. Ambient Noise

Chart 1.
Typical Noise Levels

LOCATION	dB
MACHINE SHOP	90
MANUFACTURING (NOISY)	80
PRINTING SHOP	80
ASSEMBLY LINE	75
SUPERMARKET	75
TRANSPORTATION -	
WAITING ROOM	75
OFFICE (NOISY)	70
SHIPPING/WAREHOUSE	70
RESTAURANT	70
DEPARTMENT STORE	65
BANK (PUBLIC AREA)	65
OFFICE (QUIET)	55
OFFICE/DOCTORS -	
WAITING ROOM	55
HOTEL LOBBY	55
DOCTORS EXAM ROOM	55

Figure 1A.
Talkback/Paging Connections & Applications

***NOTES:**

1. Wheelock's TBM-101 Talkback Module may be connected to a 600 ohm low power audio page port if the page port allows two-way audio. Check with telephone system manufacturer.
2. If unused CO port requires talk battery to pass audio (most do), then install using a Wheelock RPS-2406 power supply as shown in Figure 3. For multi-zone applications, a Wheelock Zone Control is required as an interface.
3. Denotes optional "inhibit" wires. Disconnects (inhibits) Talkback when an all page is initiated. Applicable only when TBM-101 is used with Wheelock Zone Controls. Use "INH. GND (+)" only when TBM-101 and Zone Control are using separate power supplies.

PRIVACY LED INDICATOR OPERATION:

- A. When connected to Wheelock's ZC-3 Zone Control Module, the Privacy LED illuminates when the TBM-101 is in the listen mode.
- B. When connected directly to an unused CO port:
 - The LED will be illuminated when the TBM-101 is in the idle state. Occasional flicker of the

LED is normal (caused by sudden noise).

- When in the two-way communication (hands free talkback) mode, the privacy LED will be illuminated only when in the listen mode.

SPECIFICATIONS:

PARAMETERS	MIN.	NOM.	MAX.	UNITS
SUPPLY VOLTAGE	-20	-24	-28	VDC
OPERATING CURRENT		80	150	mA
AUDIO INPUT LEVEL	-15		10	dBm
T & R INPUT IMPEDANCE		600		OHMS
SWITCHING SPEED		200		mSec
AUDIO OUTPUT LEVEL @ 1 METER		95		dB
OUTPUT POWER		1		WATT
TALKBACK REPLY DISTANCE @ 50 dB AMBIENT		50		FT.

INSTALLATION INFORMATION:

The unit should be located away from noise producing equipment such as fans, air conditioner units, etc. Performance will be determined by a combination of ambient (background) noise level, and distance - See Figure 1.

MOUNTING INFORMATION:

The TBM-101 is designed to mount on a desk, or the surface of a wall. Remove the top cover by pushing on the latch at the bottom of the housing base with a small screwdriver (See Figure 2). To mount the unit, space the 2 mounting screws provided horizontally on 2.750" centers (See Figure 2B). To mount the unit, space the 2 mounting screws provided horizontally on 2.750" centers (See Figure 2A). Ideal mounting height is 6-12 feet above floor level. Connect wires as specified in wiring on page 5, and then snap cover back onto base. Be sure that the base sides line up between the cover sides and the 4 fingers on the cover sides. See Figure 2B.

Figure 2.

Figure 2A.

NOTE:
SIDES OF BASE LINE UP BETWEEN SIDE WALL
AND FINGERS ON COVER SHOWN.

Figure 2B.

CONNECTION DIRECTLY TO AN UNUSED CO PORT:

When connecting a TBM-101 directly to an unused CO port requiring talk battery to pass audio (most do), install with a Wheelock RPS-2406 power supply as shown in Figure 3.

NOTE

Use This Installation For No More Than One TBM-101
Figure 3: Unused Co Port Installation

Figure 3A: Simplified Schematic

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WIRING: (See Figure 3A.)

- Make sure the 24VDC Power Supply is disconnected from 115VAC Power Source..
- Connect 24VDC power supply "+" and "-" to TB1 terminals 1 and 2 respectively.
- Connect Tip and Ring from telephone system, or Wheelock Zone Control Modules "T out" and "R out" to TBM-101's terminals.
- If connected directly to telephone system, disable TB Inhibit by shorting TB1 terminals 5 and 6 with a jumper wire.
- For connection to an unused CO port requiring talk battery, install as shown in Figure 3.

- When used with Wheelock's ZC-3 Zone Control:
 - (A) Connect TB1 terminals 6 to the required ZC-3 zone INH terminal (TB2, terminals 13, 14, or 15).
 - (B) If TBM-101 and ZC-3 use separate power supplies, then also connect TB1 terminal 5 to the ZC-3's TB1 terminal 4.
- Make sure to route the wires through the two cable clamps attached inside the unit.
- Recheck all wiring.
- Connect speaker wires to pins marked "speaker P1 (red) and P2 (black)". Then snap cover onto base.
- Connect the power supply to 115VAC power source.
- Test the system using the following operation instructions.

OPERATING INSTRUCTIONS:

- Pick up telephone hand set and press the CO line button, or dial the number assigned to paging. When used with Wheelock Zone Control, next touch dial number assigned to zone in which TBM-101 has been connected, and listen for page alert tone.
- Paging and talkback is now possible. The calling party has control of the conversation (direction of speech).
- Talkback is possible only while LED is illuminated and calling party is silent.
- Talkback (respond hands free) at a voice level normally use (in that location) to respond to another person at the some distance.
- Adjust page volume control and internal talkback microphone sensitivity control (phone listening volume) to desired levels.

TROUBLE SHOOTING:

CONDITION

CHECK

- | | |
|--|---|
| 1. No sound in page mode. | 1) Check that volume control is turned up (clockwise).
2) Check presence and polarity of 24VDC and GND.
3) Check audio presence and level on TIP and RING at TBM-101, and if necessary also at the audio source. (-15dBm is minimum audio level required at TBM-101). |
| 2. Low volume in page mode. | 1) Check that volume control is turned up (clockwise).
2) Check audio presence and level on TIP and RING at TBM-101, and if necessary also at the audio source. (-15dBm is minimum audio level required at TBM-101). |
| 3. Listening volume at phone is too high in talkback mode. | 1) Set the sensitivity control to the suitable listening level. |

Some telephone systems require that CO trunk port (loop start) or CO line port be equipped with a trunk card, page card or equipment. Consult the telephone manufactures system manual for equipment or programming required.

Limited Warranty

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