

# TCM RELAY INSTRUCTION MANUAL

This instruction manual contains important safety information to enable the correct use of this product. Failure to connect the product correctly can result in damage to the product or any device connected to it. Damage caused by incorrect connection or use of this product is not covered by warranty.

These instructions should be read in conjunction with the installation documentation supplied with the Aiphone TCM intercom equipment.

1. Do not connect any power source other than the one specified on TCM RELAY. Fire or damage to the unit could result.
2. Do not connect to an AC power supply.
3. Do not modify the TCM RELAY it could cause fire or electric shock.
4. Make sure all connections are made before switching on the power supply.
5. Keep the TCM RELAY away from water or any other liquids. Fire or electric shock could result.
6. Do not make any connections with the power supply connected and turned on. Fire or electric shock could result.
7. Do not install the unit where it will be subject to vibration, moisture or humidity, oil, chemicals and salt air.

The TCM RELAY enables the Aiphone TCM intercom system to have door release control of up to ten doors. The TCM RELAY provides ten normally closed and normally open relay contacts to enable the control of fail safe or fail secure electric door or gate locks. It also provides ten open collector outputs for CCTV camera control or interface with an access control system. If more than ten door release outputs are required more TCM RELAY's can be installed. The TCM RELAY is compatible with systems using the Aiphone TCM series master stations with TBSE handset sub stations, TBAD1 and TBAD10 audio door station interfaces as well as the TBADM10 video pan tilt door station interface.

The TCM RELAY is compatible with systems comprising two master stations. Aiphone do not recommend installation of two master stations when audio or video door station interfaces are installed on a TCM series master station, though the TCM RELAY is designed to operate with dual master stations regardless if door station adaptors are installed.

Connections are made via terminal strips located on the PCB. There is a 20mm hole in the case to allow for cable access. In addition there are sockets located on the PCB to enable connection to the inputs and outputs via ribbon cable. Please refer to the installation instructions for these connections and precautions.

A normally open non-latching press switch will be required for use as a door release switch; this switch is not supplied with the TCM RELAY. This switch would be mounted next to the Aiphone TCM master station.

We reserve the right to alter or modify the product or product documentation at any time for the purpose of product enhancement.

## OPERATION

When a call is placed from a door station or a sub station handset the open collector output associated with this call input channel will switch on causing the LED connected to this open collector output on the TCM RELAY to illuminate, or the CCTV input connected to this open collector output on the TCM RELAY to select the appropriate camera or function.

The sub station call is then acknowledged at the Aiphone TCM series master station by picking up the handset and pressing the button next to the illuminated sub station call in LED on the Aiphone TCM master station.

Communication is now possible between the master station and the door or sub station.

To operate the door lock associated with this door station or sub station press the door release switch next to or near the master station before hanging up the handset on the Aiphone TCM master station or selecting another door or sub station.

If another door station or sub station calls while the master station is communicating with a door or sub station the open collector output will switch on as well as the call in LED on the Aiphone TCM master station.

Complete your communications with the current door or sub station before acknowledging the call from the next-door or sub station.

To operate the door lock without receiving a call from the door station or sub station pick up the handset on the Aiphone TCM master station, select the required door or sub station by pressing the corresponding sub station selector button on the Aiphone TCM master station.

The Aiphone TCM master station will now call the door or sub station, if the station being called is a TBSE handset sub station it must answer the call by picking up the handset.

The door release switch next to or near the master station can now be pressed to operate the door release before hanging up the handset on the master station.

Note the door release function will not operate unless the master station has selected or received a call from a door station or sub station and the master station has acknowledged the call from the door or sub station.

## CABLING

There must be no more than 10 meters of cable between the TCM RELAY input connections and the Aiphone TCM master station. The relay output cabling is as specified by the door release manufacturer to suit the lock and cable distance. The open collector cabling type and distance is as specified by the CCTV switcher connected to this output. Power supply cabling is 24.020 or 0.75mm diameter with a maximum distance of 10 metres from the power supply to the TCM RELAY.

## SPECIFICATIONS

Power source	18 volts DC (Do not connect to AC)
Current consumption	200 mA maximum
Relay contacts rating	3 Amp 24 volts
Relay contact type	Normally closed Normally open
Relay outputs	Ten
Fuse rating	5 Amp quick blow type
Open collector rating	40 mA 24 volts maximum
Open collector outputs	Ten
Dimensions	222mm x 146mm x 55mm
Temperature	0 – 50 degrees Celsius
Input wiring	0.5mm Diameter or 14/0.020
Input wiring distance	10 meters maximum

## Socket Pin outs

### 16 Pin Socket

Pin Number	Function
1	Door 1 input control from TCM master
2	Door 2 input control from TCM master
3	Door 3 input control from TCM master
4	Door 4 input control from TCM master
5	Door 5 input control from TCM master
6	Door 6 input control from TCM master
7	Door 7 input control from TCM master
8	Door 8 input control from TCM master
9	Door 9 input control from TCM master
10	Door 10 input control from TCM master
11	DR door release switch (use pin 15 for common return)
12	18 volt power input
13	18 volt power input
14	Relay Common (power input via fuse)
15	Common (negative)
16	Common (negative)

### 20 Pin Socket

Pin Number	Function
1	Door 1 relay normally closed contact
2	Door 1 relay normally open contact
3	Door 2 relay normally closed contact
4	Door 2 relay normally open contact
5	Door 3 relay normally closed contact
6	Door 3 relay normally open contact
7	Door 4 relay normally closed contact
8	Door 4 relay normally open contact
9	Door 5 relay normally closed contact
10	Door 5 relay normally open contact
11	Door 6 relay normally closed contact
12	Door 6 relay normally open contact
13	Door 7 relay normally closed contact
14	Door 7 relay normally open contact
15	Door 8 relay normally closed contact
16	Door 8 relay normally open contact
17	Door 9 relay normally closed contact
18	Door 9 relay normally open contact
19	Door 10 relay normally closed contact
20	Door 10 relay normally open contact

Note when the 20 pin connector is used the total **maximum** current that can be switched is 100mA at 24 volts. This connector is to facilitate connection to an access control system and not for the switching of door strikes. If it is to be used to switch door strikes additional external relays will be required.

### 10 Pin Socket

Pin Number	Function
1	Door 1 open collector output
2	Door 2 open collector output
3	Door 3 open collector output
4	Door 4 open collector output
5	Door 5 open collector output
6	Door 6 open collector output
7	Door 7 open collector output
8	Door 8 open collector output
9	Door 9 open collector output
10	Door 10 open collector output

Note use pin 16 of the 16 pin connector as the common return for the open collector outputs when using the 10 pin connector to connect to the open collector outputs.

### ***WARRANTY***

This product is covered against defects of materials or workmanship for a period of two years after delivery to the ultimate user and Audio Products Group will repair free of charge or replace it at no charge, should it be defective and examination shall disclose it to be defective and under warranty.

This warranty shall not apply to any product that has been the subject of misuse, neglect, accident, or to use in violation of the instructions furnished, nor extended to units that have been modified outside the factory.

This warranty covers bench repairs only, and must be returned to an authorised service centre for repair, the cost of service calls or any cost incurred is not covered by this warranty.



