ThermalTronix

TT-MDL-A-SDA Series
Thermal Camera Specifications

User Manual

CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Warnings

- Please avoid aiming the lens at extreme high temperature radiation source, such as the sun, molten steel or laser in any situation; otherwise the detector may be damaged.

- Please do not touch the lens to avoid contaminating and damaging. Please pay attention to protect the lens to avoid causing abrasion, scratches even breaches, otherwise, it will affect the device performance badly, even damage the device.

- This device is a precise optoelectronic product. Please protect it properly during usage, storage and transportation, where improper use (such as drop and collision) will cause damage to the device.

- Make sure that the power control connection is reliable. If the power control wire is in bad connection, it will damage the device.

- Ensure the proper connection of power control cable and data cable. Wrong connection may cause damage to the device.

- Do not swag fiercely or collide the device during transportation, otherwise it will cause performance-reduction and even damage to it.

If the product works abnormally, please contact the dealer or the nearest after-sale service center. Please do not dismantle or replace it in any manners.

Contents

1   Introduction

TT-MDL-A-SDA Series is composed of uncooled infrared thermal imaging module and visible light camera, which can be applied in the following fields: middle-range power stations, public places; short-range gate of entry and exit, equipment storage sites; day and night to monitor people, vehicles, ships and so on.

1.1 FEATURES

Thermal camera

- Fixed athermalized lens
- AUTO calibration
- Manual or Automatic brightness/gain adjustment
- Image Noise Reduction function: reduce Image background noise
- Image enhancing function : enhance the ability to detect small object

CCD camera

- With the state-of-the-art digital signal processing technology, full digital image processing and special algorithm of 550 TVL high resolution implemented.
- High Sensitivity: It implements images of high sensitivity using the up-to–date Super-HAD CCD.
- High performance surveillance camera, 25X zoom

PTZ

- Preset：128 presets can be setup
- Support 0°~360°(pan) continuous rotation
- Top load of tilt is -3°~93°
- RS485, support PELCO-D/PELCO-P protocol
- IP66,full weatherproof

1.2 INCLUDED

TT-MDL-A-SDA Series List for accessories and files：

accessory	quantity	remark
Dome Camera	1	
AC24 Power Adapter	1	
User manual	1	
Packing list	1	
qualification	1	

2 Component names and functions

2.1 Device appearance

Pic. 1

No.	Description	Remark
1	Thermal	Thermal camera
2	CCD Camera	Include CCD camera and protocol board

2.2 Connector definition

The control wire is from bottom of PT system.
Definition as follows:

No.	Description	Remark
1	RS485	RS485+
2		RS485-
4	CCD Video	Analog video output of CCD camera
5	IR Video	Analog video output of thermal imaging camera
6	AC24V	Power supply
7	GND	

3　OPERATION GUIDE

3.1 Communication parameters

Thermal camera default address：**PELCO-D**、baud 2400 (**9600),** address **2**

PT system default address：**PELCO-D**、baud 2400 (**9600),** address **1**

Visual camera default address：**PELCO-D**、baud 2400 (**9600),**address **1**

Protocol board address：**PELCO-D**、baud 2400 (**9600),** address **1**

3.2 Thermal camera control key description

Before the operation. Pls set address 2 firstly.

Calibration	LENS+	LENS-	Polarity
Up	FOCUS+	FOCUS-	Down
Alarm switch	ZOOM+	ZOOM-	Digital Zoom
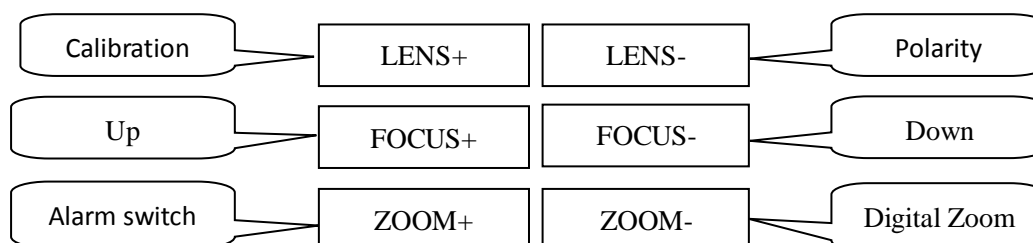
3.3 CCD camera keys description

Before the operation, pls set address 1 firstly

Operational keys	Function
Up	PTZ up
Down	PTZ down
Left	PTZ left
Right	PTZ right
FOCUS-	Near Focus
FOCUS+	Far Focus
ZOOM-	Zoom out
ZOOM+	Zoom in

4 Thermal imaging camera menu

4.1 Main-menu operations

Before operate thermal camera .please set address 2 firstly

Without the menu call preset 100 to activate the main menu. Enter the main menu (pic 2):
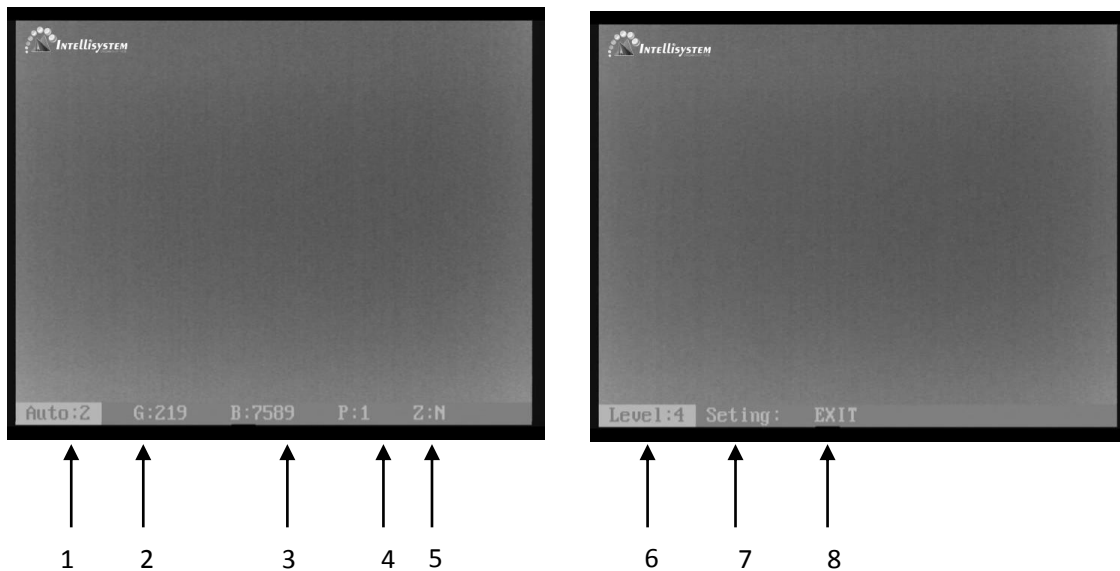
Pic 2

Press key "LENS-" move the cursor，Press key "FOCUS+" or "FOCUS-" to change the value where the cursor

is. Auto save when exit

1、 <u>**Auto: XXX**</u>   Display the current image auto mode. Three options:

0: manual gain, manual brightness;

1: manual gain, auto brightness;

2: auto gain, auto brightness;（Factory default）

2、 **G: XXX**　　　　Gain value, range: 1～1023；

3、 **B: XXX**　　　　 Brightness value, range

4、 **P: XXX**　　　　White/black hot display mode

0: black hot　　 1: white hot

5、 **Z：Y/N**　　　Zoom status

N：no zoom （default）　　 Y：2X digital zoom

6、 **Level：X**　　show the range of alarm：From 1 to 6, default is 4

7、　**Seting :**　　 Activate the setting secondary menu

Press key "FOCUS+" or "FOCUS-"，show the password dialogue

Press "FOCUS+、FOCUS-、FOCUS+、FOCUS-、FOCUS+、FOCUS-" to enter setting menu

dialogue. This password is suitable for all the password dialogue box in the thermal

imaging camera

8、　**EXIT :**　　Press key "FOCUS+" or "FOCUS-" to exit
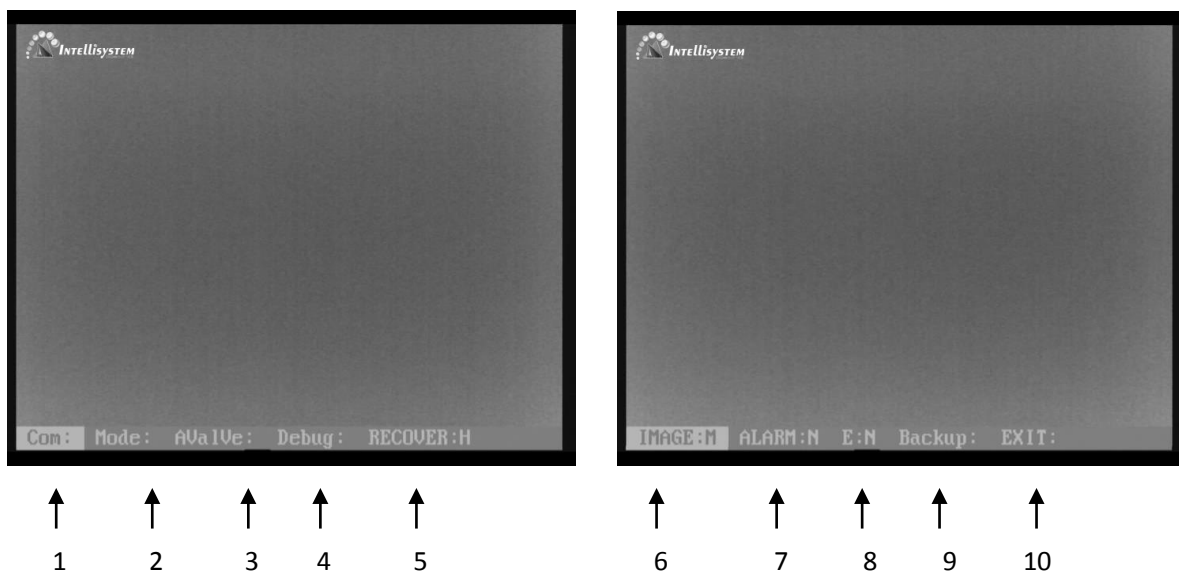
Note ：

● All parameters are save automatically after exit

● The camera will run the last setup after reboot

4.2 Setting secondary menu

In the main menu, move the cursor to "setting" ，press key "FOCUS+" or "FOCUS-" show the password dialogue，refer to Pic 3 ,Input the password to enter，refer to Pic 4

Pic 3

Pic 4

Press key "LENS-" move the cursor, press key "FOCUS+" or "FOCUS-" to change the value or get into the submenu where the cursor is 。Auto save when exit

    1、**COM:**   Setup the communication parameters.

    2、Mode :   Setup the mode parameters.

    3、**AValue:**   Setup the alarm parameters.

    4、**Debug:**   Debug option only for R&D department of manufacturer

5、 **RECOVER ： H/L/N**   Setup as H /L/N；

    Setup as H：   Calibrate 1 time during the 1 minute if working time less than 10 minutes. Calibrate 1 time during 2 minutes if working time between 10 and 30 minutes .calibrate 1 time during 5 minutes if working time between 30 minutes and 1 hour. Calibrate 1 time during 10 minutes if working time more than 1 hour. Calibrate 1 time during 20 minutes if working time more than 2 hours.

    Setup as L： Calibrate 1 time during the 1 minute if working time less than 0 minute. Calibrate 1 time during 2 minutes if working time between 10 and 30 minutes .calibrate 1 time during 5 minutes if working time more than 30 minutes

    Setup as /N：   calibrate manually ；

6、 **Image: high/middle/low**   setup as high/middle/low；

    Each grade relatively corresponds to a value. It could be setup in the TEST menu .default is middle

7、 **Alarm：X**   Show the status of gray alarm ： N/Y

         N: off；（Default）   Y: On
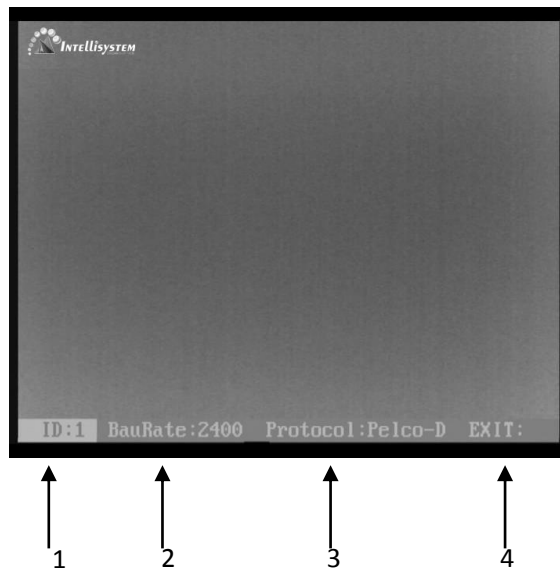
8、 **E：X**   Show the status of image enhancement，setup as **C / 1⁄2**

         C:Close；（default）   1⁄2：Open relatively enhancement grade

9、 **Backup：**   Factory default

10、 **Exit ： XXX**   Press key "FOCUS+" or "FOCUS-" to exit

4.3 Com sub-menu

ID:1 BauRate:2400 Protocol:Pelco-D EXIT:

1   2   3   4

Pic 5

In the menu "COM"(chapter 4.2 shows how to activate the "com" option)，Press key "LENS-" move the cursor ，Press key "FOCUS+" or "FOCUS-" to change the value where the cursor is. Refer to Pic 5. Auto save when exit

1、**ID：XXX**   Address of the IR camera：0~254。

2、**BauRate：XXX**   Baud :1200,2400,4800,9600,14400,19200,38400。

3、**Protocol：**   PELCO-D/PELCO-P。

4、**Exit：**   Press key "LENS+" to exit

Default：Add:1   Baud:9600   Protocol: PELCO-D
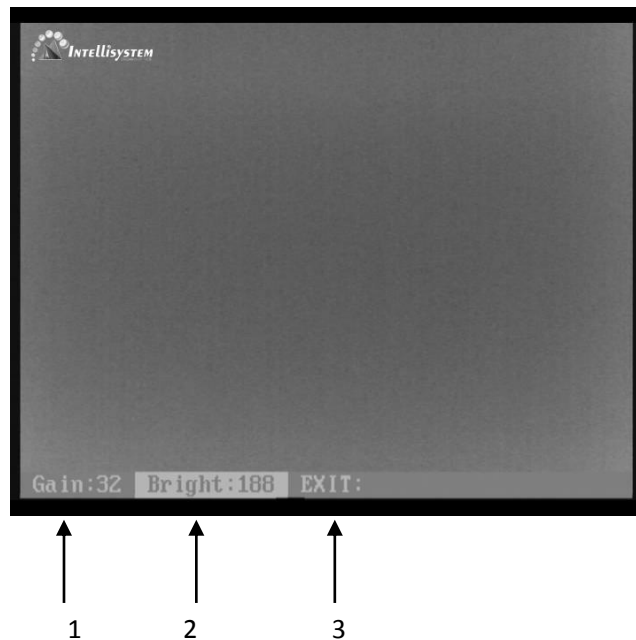
4.4 Mode sub-menu
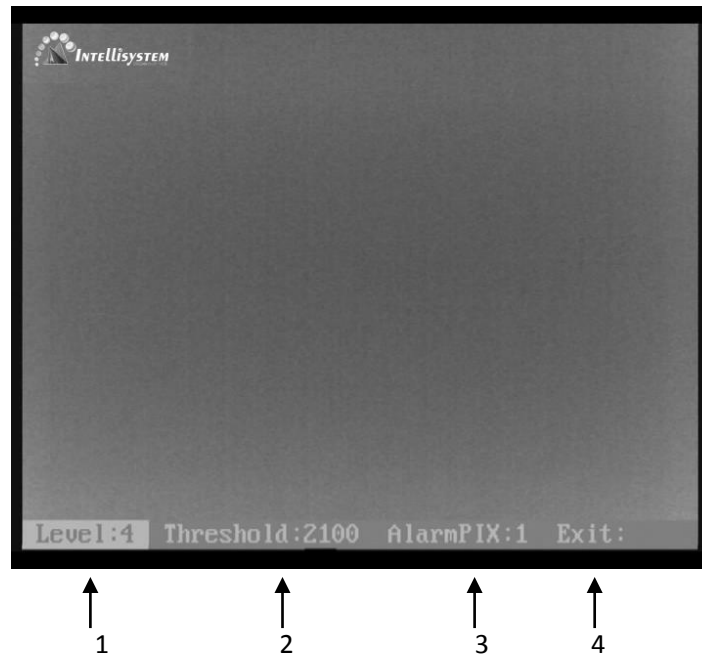
Pic 6

In the menu "Mode" (chapter 4.2 shows how to activate the "Mode" option)，Press key "LENS-" move the cursor ，Press key "FOCUS+" or "FOCUS-" to change the value where the cursor is. Refer to Pic 6.Auto save when exit

1、 **Gain：XXX**   Range: 0~255。

2、 **Bright：XXX**   Range :0~255。

3、 **Exit:**   Press key "LENS+" to exit

  Default：Gain:32   Bright:188

4.5 Alarm Value sub-menu

Pic 7

In the menu "Avalue" (chapter 4.2 shows how to activate the "Avalue" option)，Press key "LENS-" move the cursor ，Press key   "FOCUS+" or "FOCUS-" to change the value where the cursor is. Refer to Pic 7.Auto save when exit

1、**Level：X**　　　　Range: 1~6。

2、**Threshold：XXX**　　Show the status of Alarm Valve 。

3、**AlarmPIX：XXX**　　minimum pixels of alarm.

 Such as alarm Number 2 .so the alarm pixel is 2* 2 .totally 4 pixels

4、**Exit:**　　　Press key LENS+ to exit。

Default: Level and Threshold :(Level 1: 650, relatively temperature difference is 30 ℃. Level 2:1050, relatively temperature difference is 45 ℃, Level 3:1450, relatively temperature difference is 60 ℃, Level 4:2100, relatively temperature difference is 80 ℃, Level   5:2800, relatively temperature difference is 100 ℃, Level 5:3600, relatively temperature difference is 120℃)   AlarmPIX :1

5   Technical specifications

Items		ThermalTronix	
		TT-1018MDL-A-SDA	TT-1037MDS-A-SDA
Double visual imaging system			
Thermal Camera			
Detector type		Uncooled FPA microbolometer	
Spectral range		8~14um	
Resolution		384×288	
Pixel size		25um	
Focal length		18mm	37mm
Field of view		30.6°*22.9°	14.8°*11.1°
Lens		Fixed, athermalized	
Video out		PAL mode	
Frame rate		50Hz	
Polarity		White hot/Black hot	
Communication		RS485 , Support PELCO-D/PELCO-P/Intellisystem	
Visual Camera			
CCD Camera	Resolution	PAL:752(H)×582(V) / NTSC:768(H)×494(V)	
	Imaging device	1/4" SONY EX-View HAD CC	
	Lens	3.4 mm to 122.4 mm/ F1.6 to F4.5 , 36X	
	Horizontal resolution	Color : 550TV lines , B/W : 570TV lines	
Pan&Tilt			
Angle info feedback		Support(PELCO-D protocol)	
Horizontal angle of rotation		0 ~ 360° continuous rotation	
Vertical angle of rotation		-3°~93°	
Horizontal rotation speed		0.05° -150°/s	
Vertical rotation speed		0.05° ~100°/s	
Preset		128	
Material		Camera body in aluminium alloy, housing in aluminium alloy	
Physical characteristics			
Dimensions		Φ245(mm)×375(mm)	
Encapsulation		IP66	
Weight		7kg	
Operation temp		-40℃ ~ 55℃	
Storage temp		-40℃ ~ 70℃	
Interface			
Video output		PAL; 2 channels	
Communication		RS485	
Protocol		Support PELCO-D/P	
Baud rate		2400/4800/9600 bps	
Power Supply		AC24V±4V	
Power Consumption		50W	