TP SERIES

Thermal Imaging Sensor

PERFORMANCE SPECIFICATION CHINO

New addition to TP series, a compact infrared thermal imaging sensor, 6Hz analog output model !

TP-H series is an installation type, compact and highly versatile infrared thermal imaging sensor utilizing a 2000 pixel resolution infrared detector.
New addition of 6Hz, analog output type realizes usage in various fields utilizing thermal data such as intra-area hot spot detection, temperature variations in various line and facilities and trend monitoring.

Model

Frame rate 6Hz specifications

Measurement range -20 to 300°C

TP-H02□□AN

- Viewable Angle
  - 60 : 60°x 60°
  - 25 : 25°x 25°
- Interface
  - A : Ethernet with analog output

Standard specifications

Measurement range -20 to 300°C

TP-L02□□□N

- Viewable Angle
  - 60 : 60°x 60°
  - 25 : 25°x 25°
- Interface
  - E : Ethernet
  - U : USB

Measurement range 100 to 800°C

TP-L0225EK

- Viewable Angle
  - 25 : 25°x 25°
- Interface
  - E : Ethernet

Standard Configuration

Frame rate 6Hz specifications

- Compact infrared thermal imaging sensor unit
- Ferrite core
- Exclusive power cable (Ø3.7mm, O terminal, 2mm)
- Contact input/output, analog output exclusive cable (2m)
- LAN cable (straight cable, CAT5e)
- Universal head
- Universal head fixing screws (3 pieces)
- Carl plugs for mounting the universal head for concrete (3 pieces)
- Lens cap
- Quick manual
- Application software
- Instruction manual (CD-ROM)

*Power supply (24V DC) is sold separately.

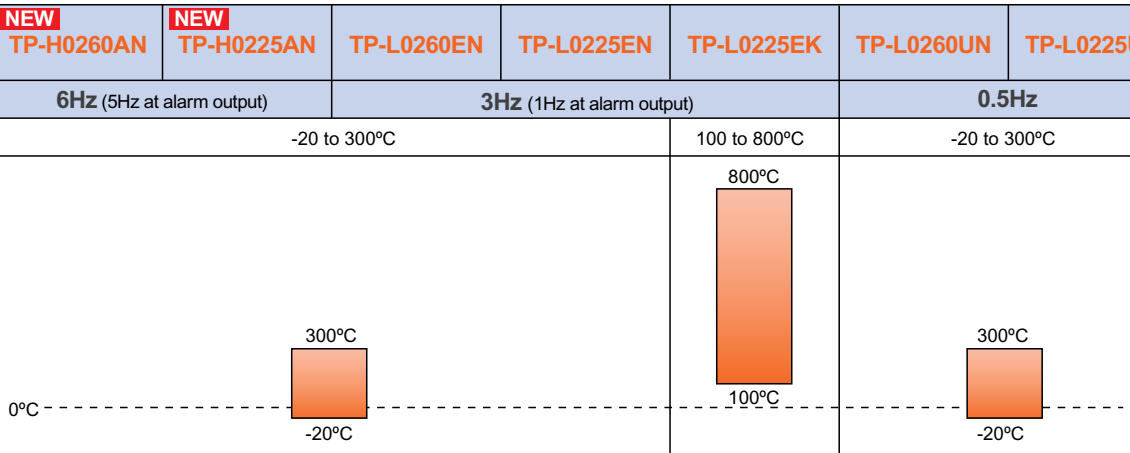
Standard specifications

- Compact infrared thermal imaging sensor unit
- Ferrite core
- Exclusive power/alarm output cable (Ø3.7 mm/O terminal, 2.5m)
- Exclusive communication cable (LAN or USB)
- Universal head
- Screws for universal head (3 pieces)
- Curl plugs for mounting the universal head for concrete (3 pieces)
- Lens cap
- Connector cap
- Fixing screw (attached to bottom of thermal image sensor)
- Quick manual
- Application software
- Instruction manual

*Power supply (12V DC) is sold separately.

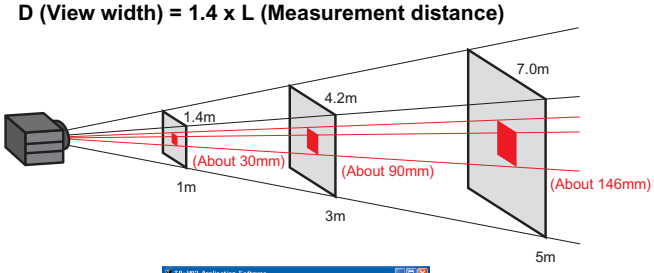
Models

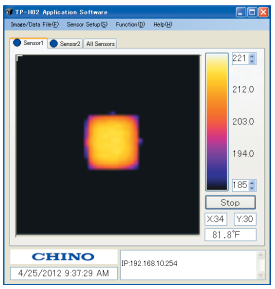
Specification \ Models	NEW TP-H0260AN	NEW TP-H0225AN	TP-L0260EN	TP-L0225EN	TP-L0225EK	TP-L0260UN	TP-L0225UN
Frame rate	**6Hz** (5Hz at alarm output)		**3Hz** (1Hz at alarm output)			**0.5Hz**	
Measurement range	-20 to 300ºC				100 to 800ºC	-20 to 300ºC	
Measurement spot size and distance	60˚x 60˚	25˚x 25˚	60˚x 60˚	25˚x 25˚		60˚x 60˚	25˚x 25˚
Radius resolution	21.8mrad	9.1mrad	21.8mrad	9.1mrad		21.8mrad	9.1mrad
Interface	Ethernet (10BASE-T/100BASE-TX)					USB2.0-compliant communication speed fixed at 115kbps	
Analog output	4 to 20mA DC		———				
Power consumption	Max 2.5VA (at 24V DC)		Max 2.5VA (at 12V DC)			Max1VA (at 12V DC)	



Measurement spot size and distance

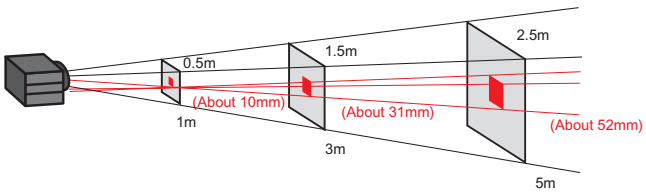
60º x 60º specification
D (View width) = 1.4 x L (Measurement distance)

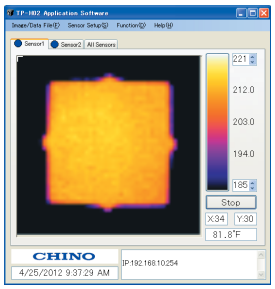




Distance 500mm
Example of measured object 180 x 180mm

25º x 25º specification
D (View width) = 0.5 x L (Measurement distance)





Distance 500mm
Example of measured object 180 x 180mm

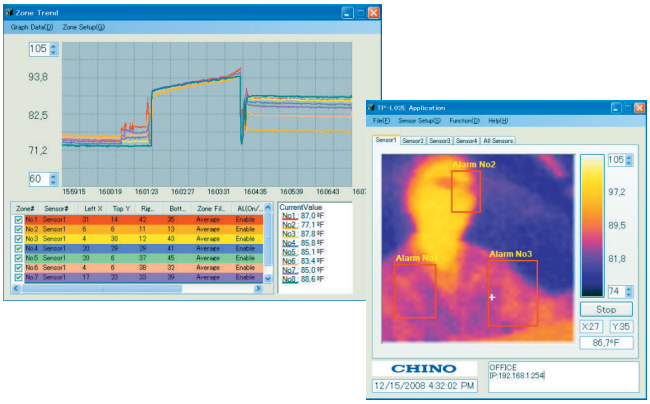
Exclusive application software (Standard accessory)

Offers configuration of the compact thermal imaging sensor, thermal image, temperature data storage, trend graph display and image processing are available for the compact thermal image sensor.

Correspond to multiple languages

Japanese, English, Chinese (simplified), Korean, German and Italian

Connectivity Ethernet specification--- 4 sensors
USB specification--- 1 sensor



Alarm detecting function

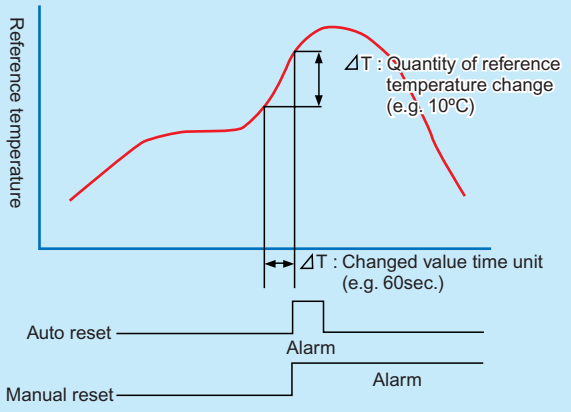
Alarm setting contents

- High limit
- Low limit
- Sensor abnormal
- Rate of change alarm NEW (Only for TP-H series)
- Output pattern (Auto reset/Manual reset)
- Output logic selectable (A contact/ B contact)

About rate of change alarm

- Output contact when set area temperature exceeds setting temperature within set time (max. 60 seconds).
- Effective when relative value management (change from the normal state) is needed.

e.g.) Using Alarm 1, output contact when temperature rises 10ºC or more within 60sec.



● Alert an alarm when ⊿T (Quantity of reference temperature change) > rate of change alarm setting value

Specifications

Main unit specifications

Models	TP-L0225EK	TP-L0260EN,TP-L0225EN	TP-H0260AN,TP-H0225AN	TP-L0260UN,TP-L0225UN
Temperature measurement range	100 to 800ºC	-20 to 300ºC		
Communication interface	Ethernet			USB
Frame rate	**3Hz** (1Hz at alarm output)		**6Hz** (5Hz at alarm output)	**0.5Hz**
Temperature resolution	0.5ºC (at 100ºC black body)			
Accuracy ratings (Under ambient temperature 25 ± 2°C)	±1% or ±3°C of measured value, whichever is greater.	±2% or ±3°C of measured value, whichever is greater.		
Repeatability	0.3ºC			
Detecting element	Thermopile array with 2000 pixels			
Measurement wavelength	Center wavelength 10μm			
Measurement view angle	25º x 25º	Specify from 60º x 60º or 25º x 25º		
Radius resolution	9.1mrad	60º x 60º... 21.8mrad, 25º x 25º... 9.1mrad		
Focus	Fixed focus			
Emissivity correction	0.10 to1.00 (0.01 increments)			
Interface	Ethernet (10BASE-T/100BASE-TX)			USB2.0-compliant communication speed fixed at 115kbps
Analog output	————		4 to 20mA DC	————
Number of contact output	2 points (Non-voltage contact output)			
Number of contact input	————		1 point (For digital contact output for reset)	————
Power supply	12 to 24V DC		24V DC	12 to 24V DC
Power consumption	Max 2.5VA (at 12V DC)		Max 2.5VA (at 24V DC)	Max 1VA (at 12V DC)
Working temperature range	-10 to 50ºC			
Working humidity range	10 to 80%RH (no dew condensation)			
Material	Polycarbonate Resin black			
Weight	About 150g (sensor main unit)			
Dust and water proof structure	IP 65 (when using exclusive cable and fixing screw)		————	IP 65 (when using exclusive cable and fixing screw)
Conforming standard	CE (EN61326-1)		CE (EN61326-1) *Excluded when LAN cable is connected.	CE (EN61326-1) * Excluded when USB cable is connected.

Function of the main unit Set alarm conditions from personal computer and if the set value is exceeded, digital contact is output.

Monitor mode (Using exclusive application software)
Output temperature data continuously from command of the personal computer.

Capture mode (Using without besides exclusive application software)
Output temperature data per one row from command of High-order instrument (such as PC or PLC).
*Communication command is released for Ethernet specifications.

Application software specifications

Hardware requirements

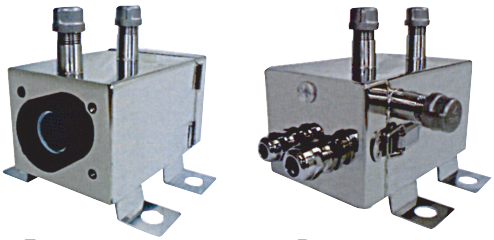
OS	Windows XP (32bit)/Vista (32bit)/7 (32bit/64bit) *1: XP or later version is recommended,.NET. Framework 2.0 or later version is required *2: USB specification is not supported by 64bit OS *3: Multiple contacts connecting software is not supported by 64bit OS
Memory	2GB or more is recommended
CPU TP-L series	2GHz or more is recommended
CPU TP-H series	Connecting with one unit ---3GHz or more is recommended Connecting with two units or more ---Dual core is recommended 3GHz or more

Function

(1) Display of thermal image
(2) Settings of communication environment
(3) Settings of thermal image sensor
 ·Emissivity settings ·Area designation (one area)
 ·Alarm settings (two contact) within the designated area
 (e.g. high limit, low limit, self-diagnostic and rate of change*)
 ·Analog output settings*
 *Only available for TP-H
(4) Image temperature data saving (CSV)
(5) Thermal image saving (JPEG)
(6) Maximum/minimum value indications
(7) Max. 8 areas alarm settings
 Alarm settings in max of eight areas
(8) Temperature scale range switching
(9) Image processing
 ·Averaging · Mirror-reversed rotation
 ·Upside-down rotation · Make the image out of temperature range transparent*
* Only available for TP-H
(10) Trend graph (Manual, Auto save)
(11) Language selection
 ·Japanese ·English ·Chinese (Simplified)
 ·Korean ·German ·Italian

For high temperature environment
Water-cooling case

Stores the compact infrared thermal imaging sensor.
Water-cooling and air purge function are provided.



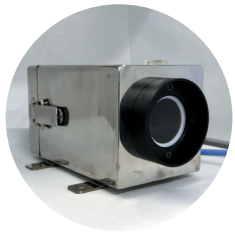
Front Rear

For window, BaF2 is used. Assembles TP-L series to the model TP-ZCC3 and performs adjustment.

For oil mist and dusty enviroment
Air purge Case

MODEL : TP-ZCC1

The air purage case is used to disperse dust and fume for keeping the light path.



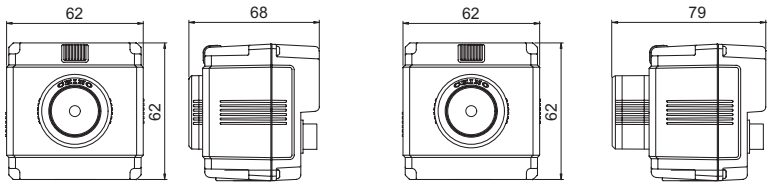
For fire detection
Bandpass filter for fire detection.

Put the filter above the lens to detect existence of fire.
(While bandpass filter is used for fire detection,
TP series cannot be used as temperature sensor.)

Dimentions

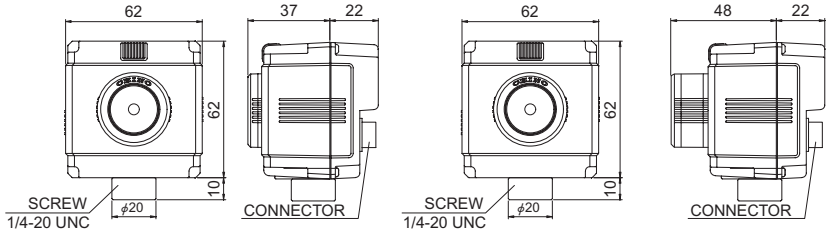
Frame rate 6Hz

Viewable Angle 60˚x 60˚ Viewable Angle 25˚x 25˚

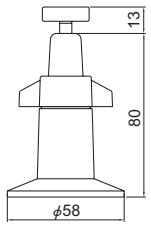


Standard

Viewable Angle 60˚x 60˚ Viewable Angle 25˚x 25˚



UNIVERSAL HEAD



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