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° x 60°
25° x 25°
Interface
A : Ethernet with analog output

Standard specifications
Measurement range 100 to 800°C

TP-L0225EK
Viewable Angle
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)
- Carl 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.
# TP SERIES

## Models

<table>
<thead>
<tr>
<th>Models</th>
<th>TP-H0260AN</th>
<th>TP-H0225AN</th>
<th>TP-L0260EN</th>
<th>TP-L0225EN</th>
<th>TP-L0225EK</th>
<th>TP-L0260UN</th>
<th>TP-L0225UN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specification</td>
<td>6Hz (5Hz at alarm output)</td>
<td>3Hz (1Hz at alarm output)</td>
<td>0.5Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frame rate</td>
<td>-20 to 300°C</td>
<td>100 to 800°C</td>
<td>-20 to 300°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement range</td>
<td>60° x 60°</td>
<td>25° x 25°</td>
<td>60° x 60°</td>
<td>25° x 25°</td>
<td>60° x 60°</td>
<td>25° x 25°</td>
<td></td>
</tr>
<tr>
<td>Measurement spot size and distance</td>
<td>21.8mrad</td>
<td>9.1mrad</td>
<td>21.8mrad</td>
<td>9.1mrad</td>
<td>21.8mrad</td>
<td>9.1mrad</td>
<td></td>
</tr>
<tr>
<td>Radius resolution</td>
<td>Ethernet (10BASE-T/100BASE-TX)</td>
<td>USB2.0-compliant</td>
<td>communication speed fixed at 115kbps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface</td>
<td>4 to 20mA DC</td>
<td>2 to 10mA DC</td>
<td>Max 2.5VA (at 24V DC)</td>
<td>Max 2.5VA (at 12V DC)</td>
<td>Max 1VA (at 12V DC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analog output</td>
<td>Power consumption</td>
<td>21.8mrad</td>
<td>9.1mrad</td>
<td>21.8mrad</td>
<td>9.1mrad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td>21.8mrad</td>
<td>9.1mrad</td>
<td>21.8mrad</td>
<td>9.1mrad</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60° x 60° specification</td>
<td>D (View width) = 1.4 x L (Measurement distance)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25° x 25° specification</td>
<td>D (View width) = 0.5 x L (Measurement distance)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Measurement spot size and distance

### 60° x 60° specification

\[ D \ (\text{View width}) = 1.4 \times L \ (\text{Measurement distance}) \]

Distance 500mm  
Example of measured object 180 x 180mm

### 25° x 25° specification

\[ D \ (\text{View width}) = 0.5 \times L \ (\text{Measurement distance}) \]

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.

![Diagram](attachment:Diagram.png)

- Alert an alarm when \( \Delta T \) (Quantity of reference temperature change) > rate of change alarm setting value

### Specifications

#### Main unit specifications

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

### 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

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

#### For high temperature environment

**Water-cooling case**

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

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

#### For oil mist and dusty environment

**Air purge Case**

**MODEL : TP-ZCC1**

The air purge 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.)

#### Dimensions

**Frame rate 6Hz**

- Viewable Angle 60° x 60°
  - 62 x 68
  - Universal Head
  - connector 1/4-20 UNC

- Viewable Angle 25° x 25°
  - 62 x 79

**Standard**

- Viewable Angle 60° x 60°
  - 62 x 37 x 22

- Viewable Angle 25° x 25°
  - 62 x 48 x 22

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Specifications subject to change without notice. Printed in Japan (1) 2012.