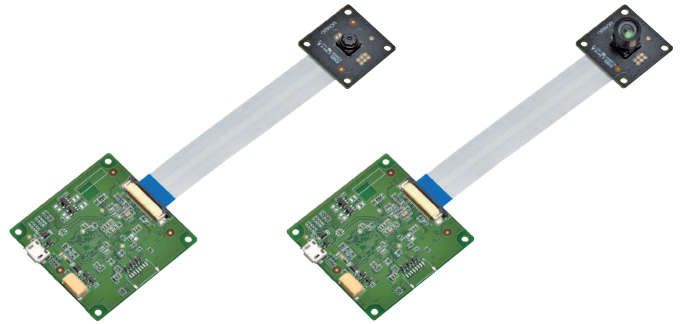


# B5T-007001

Human Vision Components (HVC-P2)

**HVC incorporates ten different image sensing functions like Face recognition in an easy-to-mount and compact format to provide image sensing capability to various devices.**

- Choice of wide-angle type and long-distance type depending of detection distance or range needs.
- Incorporates ten different image sensing functions used to recognize people's conditions.



Make sure to read the Terms of Use before using the Product. Omron will see any use of the Product as an indication that you agree and will comply with the contents of these Terms of Use.

"HVC" stands for "Human Vision Components".

**RoHS compliant**



Refer to Safety Precautions on page 10.

## Model

Lens angle	Model	Packaging	Minimum contents per box
Approximately 50 deg. (long-distance type)	B5T-007001-010	Individual box	1 unit
	B5T-007001-010H	Large box	50 units
Approximately 90 deg. (wide-angle type)	B5T-007001-020	Individual box	1 unit
	B5T-007001-020H	Large box	50 units

For detailed interface specifications for the Product, refer to the Command Specifications document (provided separately).

Information concerning the following items included with the Product:

- Datasheet
- Command Specifications document
- USB drivers
- Demo software
- Other development related documentation

can be downloaded from the website below:

<https://plus-sensing.omron.com/product/B5T-007001/>

## Term Definitions

- The "Product" indicates the B5T-007001-010 models. It consists of the "Device" and the "SDK". In this instruction sheet, the word "Product" refers to the whole or a part of them.
- The "Device" indicates the hardware component that consist of the main board, the camera board and the flexible flat cable (FFC).
- The "SDK" consists of the demonstration software, the command specifications and other documentations concerning the "Device" or the "SDK."

B5T-007001

## Ratings / Specifications / Functions

### ■ Ratings

Item	Rated values (standards)
Supply voltage	5 VDC $\pm$ 10%
Consumption current	Below 0.4 A
Operating temperature	0 to +50°C (no condensation or freezing)
Operating humidity	Below 90% RH (no condensation or freezing)
Storage temperature	-30 to +70°C (no condensation or freezing)
Storage humidity	Below 90% RH (no condensation or freezing)

### ■ Specifications & Functions

#### Image Input Specifications

Item	Specifications	
	B5T-007001-010 model	B5T-007001-020 model
Detection resolution	1600 x 1200 pixels	1600 x 1200 pixels
Horizontal detection range (angle of view)	54° $\pm$ 3°	94° $\pm$ 5°
Vertical detection range (angle of view)	41° $\pm$ 3°	76° $\pm$ 5°
Optical axis inclination	$\pm$ 4°	$\pm$ 7°
Rotation alignment	$\pm$ 2°	$\pm$ 2°

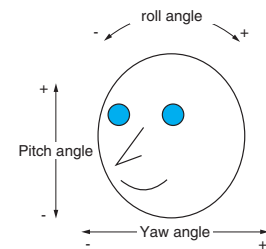
#### Image Output Specifications

Item	Specifications
Output image	No output / 160 x 120 pixels / 320 x 240 pixels (choose one)
Image format	RAW (8-bit, Y data)

#### Angle Range \*1

Function	Pitch angle (up-down)	Yaw angle (left-right)	Roll angle
Human body detection	Up 15° *2 Down -30° *2	360° *3	$\pm$ 10°
Hand detection	$\pm$ 20°	$\pm$ 30°	$\pm$ 45°
Face detection	$\pm$ 30°	$\pm$ 90°	
Face direction estimation	Face direction $\pm$ 20°	Face direction $\pm$ 30°	
Age estimation			
Gender estimation			
Blink estimation			
Expression estimation			
Face recognition			
Gaze estimation	Gaze angle $\pm$ 20° *4 (up to face direction $\pm$ 10°)	Gaze angle $\pm$ 30° *4 (up to face direction $\pm$ 20°)	

- \*1. The detection and estimation accuracy will fall when outside the specified angle range.  
Note that being within range indicated above does not always guarantee successful detection.
- \*2. "Up direction 15°" indicates that the camera is looking up to the target from a 15° downward angle and "Down direction -30°" indicates that the camera is looking down to the target from a 30° upward angle.
- \*3. This indicates all the directions to the left and right of the human body.
- \*4. This is the angle when facing the camera, regardless of the face direction angle.



#### Host Communication Specifications

##### UART

Item	Specifications
Feature	Receives the command controlling the module from the host and sends back the detection result info
System	Full duplex bidirectional system
Protocol	Non-procedural
Sync	Asynchronous method
Data format	Start: 1 bit, Data: 8 bit, Stop: 1 bit, no parity
Transmission code	NRZ method, Logic low: 0V & logic high: 3.3 V
Transmission rate	9600 (Default value)/38400/115200/230400/460800/921600 bps, can be changed through commands