

# SMore Vision Sensor VN2000(P)

| Compact industrial smart vision sensor |

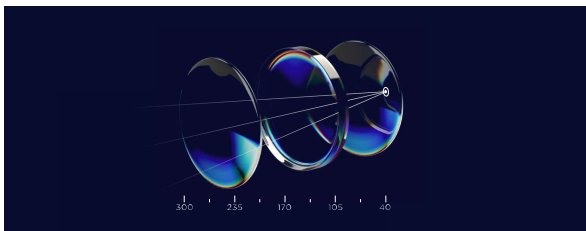


## Product features

- Built-in with rich visual algorithms, supporting presence, counting, and forward/reverse error-proofing detection.
- Equipped with SmartMore's proprietary Cube-A Technology focusing algorithm, it achieves millisecond-Product Features level zoom speed in a single operation.
- Quick parameter adjustment automatically completes focusing, exposure, gain, and light source switching.
- Visual operation software allows for easy application setup.
- Supports working distances from 40mm to 300mm, providing flexible visual inspection application scenarios.
- Rich I/O interfaces allow for real-time communication with other devices via I/O signals.
- Supports multiple communication modes for real-time data transmission, including TCP Server, TCP Client, ModBus TCP, MELSEC, SLMP, RS-232, and EtherNet/IP.

## Advanced liquid focusing

Equipped with the most advanced liquid lens, it enables millisecond-level fast focusing. Compared to traditional mechanical focusing technology, the liquid lens achieves precise focus with just a few sample images, resulting in a hundredfold increase in sampling speed.



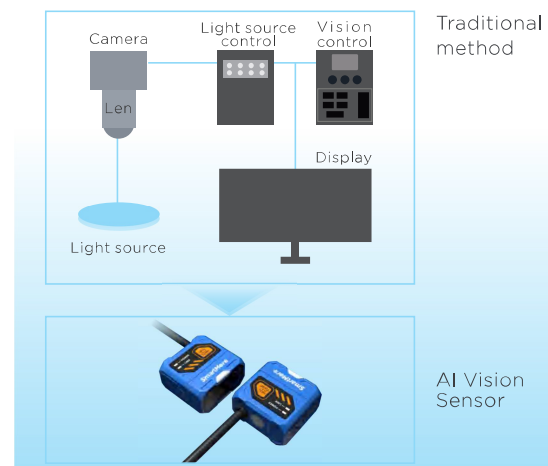
## Codeless configuration solutions

The software is user-friendly and allows quick setup without coding experience. For different scenarios, configuration and modification can be completed in just four steps.



## Compact and integrated

The intelligent sensor is a new integrated edge vision detection system. It combines traditional light sources, image acquisition, computing, and software into a single machine. Its compact size allows for independent operation without the need for external PC devices, and it can easily connect with other equipment on the production line.

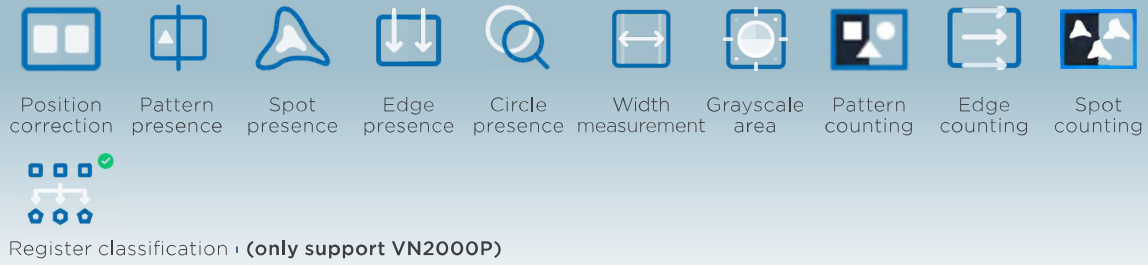


## High stability and reliability

With an IP67 protection rating, it withstands high temperature, low temperature, and aging tests, supporting various installation positions and field environments.



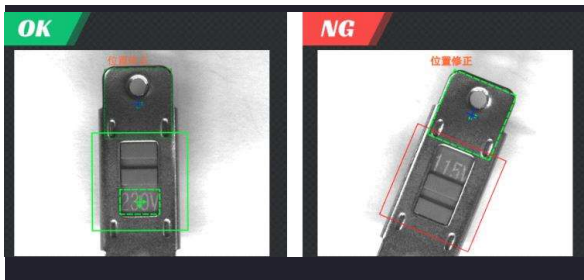
## Vision tools



## Applications

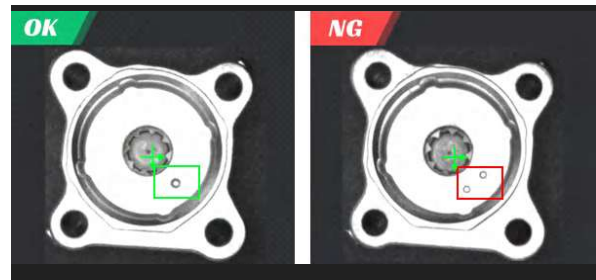
### 3C Electronics • Switch recognition

Position correction for locating targets, identifying specific patterns, and determining switch status.



### Automotive • Preventing mixed materials

Detecting the number of marks on automotive components to differentiate part types.



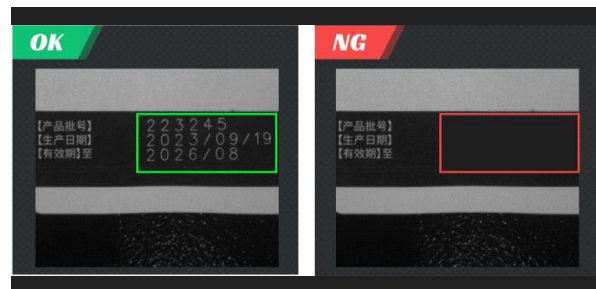
### Traditional Manufacturing • Sandpaper's front/back

Identifies sandpaper orientation by detecting the dark abrasive layer.



### Food and Pharmaceutical • Date/lot code printing presence/absence

Analyzes the character color area within the print zone to determine whether a date/lot code is printed.



3C



Automobile


Home  
appliances

Lithium  
battery


Logistics



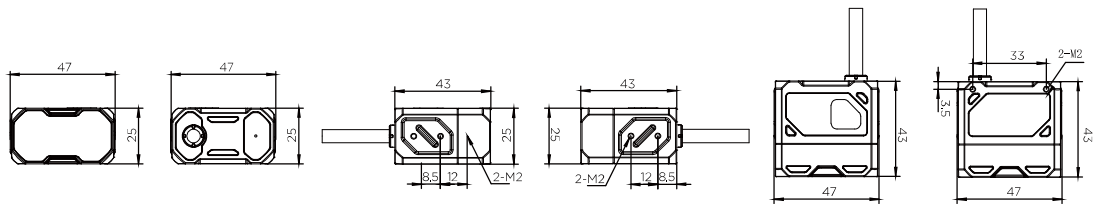
Warehousing


Food/  
Pharmaceutical

## Physical structure



## Dimensions



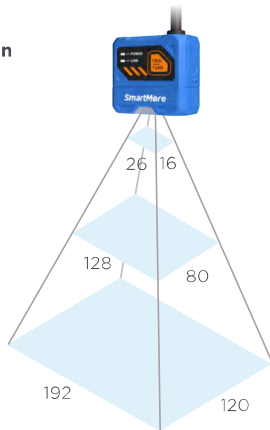
Unit: mm

## Accessories

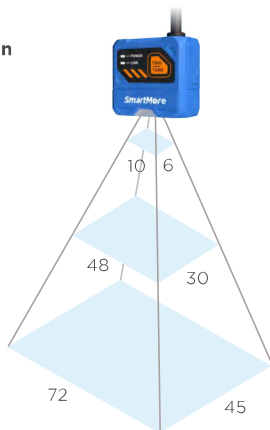
| Cable                                                                               | Power                                                                               | L-shape Mounting Bracket (optional)                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| M12-17PIN cable                                                                     | 24V power adapter                                                                   | L-shape mounting bracket + screws                                                     |
|  |  |  |

## Reading parameters

### VN2000 Series 6mm Focal Length

| Working distance (mm) | Horizontal (mm) | Vertical (mm) | Lateral view indication                                                                                                        |
|-----------------------|-----------------|---------------|--------------------------------------------------------------------------------------------------------------------------------|
| 40                    | 26              | 16            | <p><b>Field of vision</b><br/>unit (mm)</p>  |
| 100                   | 64              | 40            |                                                                                                                                |
| 200                   | 128             | 80            |                                                                                                                                |
| 300                   | 192             | 120           |                                                                                                                                |

### VN2000 Series 16mm Focal Length

| Working distance (mm) | Horizontal (mm) | Vertical (mm) | Lateral view indication                                                                                                          |
|-----------------------|-----------------|---------------|----------------------------------------------------------------------------------------------------------------------------------|
| 40                    | 10              | 6             | <p><b>Field of vision</b><br/>unit (mm)</p>  |
| 100                   | 24              | 15            |                                                                                                                                  |
| 200                   | 48              | 30            |                                                                                                                                  |
| 300                   | 72              | 45            |                                                                                                                                  |

## Technical specification

| Reading Parameters               | Model | VN2000 Liquid Focus Series                                                                                                                                                                                                                     | VN2000 Manual Focus Series |
|----------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| VN2000 Visual tools              |       | Position correction<br>Presence: pattern presence, dot presence, edge presence, circle presence<br>Counting: pattern count, dot count, edge count<br>Measurement: area detection, width measurement                                            |                            |
| VN2000P Visual tools             |       | Position correction<br>Presence: pattern presence, dot presence, edge presence, circle presence<br>Counting: pattern count, dot count, edge count<br>Identification: register classification<br>Measurement: area detection, width measurement |                            |
| Resolution(HxV)                  |       | 1280*800                                                                                                                                                                                                                                       |                            |
| Max acquisition frame rate (fps) |       | 60                                                                                                                                                                                                                                             |                            |
| Colors/Black & white             |       | Black & white                                                                                                                                                                                                                                  |                            |
| Shutter                          |       | Global                                                                                                                                                                                                                                         |                            |
| Exposure time                    |       | 20μm~1s                                                                                                                                                                                                                                        |                            |
| Pixel size                       |       | 3μm x 3μm                                                                                                                                                                                                                                      |                            |
| Target size                      |       | 1/4"                                                                                                                                                                                                                                           |                            |
| Focusing method                  |       | Liquid focus                                                                                                                                                                                                                                   | Manual focus               |
| Focal length                     |       | 6mm, 16mm                                                                                                                                                                                                                                      | 6mm                        |
| Working distance                 |       | 40-300mm (@6mm)<br>100-400mm (@16mm)                                                                                                                                                                                                           | 30-300mm                   |

### Communication Control & Electric Parameters

|                     |                                                                    |
|---------------------|--------------------------------------------------------------------|
| Location indication | 2 green light spots indicate the center area of detecting location |
| Status indicator    | 3 status LEDs and buzzer                                           |
| Polarizer           | Optional non-polarizing and fully polarizing models                |
| Light source        | Offers optional red/white light source                             |

### Structure

|                         |                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------|
| Input control           | Two opto-isolation inputs, supports NPN and PNP types                                      |
| Output control          | Three non-opto-isolation outputs                                                           |
| Communication protocol  | TCP Server, TCP Client, ModBus TCP, ModBus RTU, Profinet, Ethernet/IP, MELSEC/SLMP, Serial |
| Communication interface | Rs232, Ethernet                                                                            |
| Power supply input      | 24 VDC                                                                                     |
| Power consumption       | 5W                                                                                         |

### Dimensions & Environmental Parameters

|                       |                            |
|-----------------------|----------------------------|
| Dimension             | 47*25*43mm                 |
| Weight                | Approximately 112g         |
| Operating temperature | 0~ 45°C                    |
| Storage temperature   | -20 ~ 70°C                 |
| Humidity              | 5%-95% RH (non-condensing) |
| Protection level      | IP67                       |

## Product selection catalog

### VN2000(P) Series Smart Vision Sensor



| Model             | Light | Focal length | Polarization  | Pixels        | Focus method |
|-------------------|-------|--------------|---------------|---------------|--------------|
| VN2000(P)-100-000 | White | 6mm          | Non-polarized | 1MP(1280*800) | Manual       |
| VN2000(P)-100-001 | Red   | 6mm          | Non-polarized | 1MP(1280*800) | Manual       |
| VN2000(P)-100-002 | Red   | 6mm          | Polarized     | 1MP(1280*800) | Manual       |
| VN2000(P)-100-003 | White | 6mm          | Polarized     | 1MP(1280*800) | Manual       |
| VN2000(P)-100-030 | White | 6mm          | Non-polarized | 1MP(1280*800) | Liquid       |
| VN2000(P)-100-031 | Red   | 6mm          | Non-polarized | 1MP(1280*800) | Liquid       |
| VN2000(P)-100-032 | Red   | 6mm          | Polarized     | 1MP(1280*800) | Liquid       |
| VN2000(P)-100-033 | White | 6mm          | Polarized     | 1MP(1280*800) | Liquid       |
| VN2000(P)-103-030 | White | 16mm         | Non-polarized | 1MP(1280*800) | Liquid       |
| VN2000(P)-103-031 | Red   | 16mm         | Non-polarized | 1MP(1280*800) | Liquid       |
| VN2000(P)-103-032 | Red   | 16mm         | Polarized     | 1MP(1280*800) | Liquid       |
| VN2000(P)-103-033 | White | 16mm         | Polarized     | 1MP(1280*800) | Liquid       |

### Cable

| Product types    | Length |
|------------------|--------|
| M12-17PIN-PC-3M  | 3 m    |
| M12-17PIN-PC-5M  | 5m     |
| M12-17PIN-PC-10M | 10 m   |

### Other Accessories

|                  |                    |
|------------------|--------------------|
| Mounting bracket | L-shape bracket    |
| Mounting screws  | A set of M3 screws |