



## Vision sensors Inspector, Inspector I-series, Inspector I20-UV

VSPI-2F121



**Model Name** > [VSPI-2F121](#)  
**Part No.** > [1048353](#)



#### At a glance

- High-speed part inspection
- Robust pattern match algorithm to locate parts independent of position, rotation and scale
- Unique, even dome illumination or high-power white or UV ring light
- Easy-to-use step configuration in PC, including emulator
- Log, statistics and record
- Exchangeable lens
- Input and output extensions via I/O box
- Configurable outputs by logical expressions

#### Your benefits

- High-speed part inspection ensures quality without production overhead
- The robust pattern match algorithm locates parts independent of position, rotation and scale and guarantees high-quality results even in your toughest production conditions
- Unique UV illumination provides a quick return on investment in solar cell manufacturing by detecting broken wafers
- The compact, IP 67-rated exchangeable lens optimizes performance on different object sizes and working distances and is designed for the best price/performance ratio
- The increased I/O support via the I/O extension box gives you an easy solution for extended production control
- Configurable outputs by logical expression enables reduced cost of additional logical equipment in your production



#### Features

|                                         |                                                          |
|-----------------------------------------|----------------------------------------------------------|
| Task:                                   | Inspection                                               |
| Technology:                             | 2D<br>Image analysis<br>Snapshot                         |
| Toolset:                                | Object locator, Contour<br>Pixel count, Edge pixel count |
| Sensor:                                 | CMOS matrix sensor, gray scale values                    |
| Focus:                                  | Manually adjustable focus                                |
| Working distance:                       | ≥ 50 mm                                                  |
| Working distance internal illumination: | 50 mm ... 200 mm                                         |
| Field of view internal illumination:    | 20 mm x 20 mm ... 72 mm x 72 mm                          |
| Light source:                           | UV                                                       |
| Spectral range:                         | Near UV < 400 nm                                         |

|                  |                                          |
|------------------|------------------------------------------|
| LED class:       | Risk group 1 (low risk, IEC62471 : 2006) |
| Offline support: | Emulator                                 |

## Performance

|                        |                 |
|------------------------|-----------------|
| Resolution:            | 384 px x 384 px |
| Maximum performance:   | 250 fps         |
| Typical performance:   | 40 fps          |
| Number of inspections: | 32              |
| Reference images:      | 16 objects      |

## Interfaces

|                                   |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|
| Operator interfaces:              | Inspector Viewer                                                                  |
| Configuration software:           | SOPAS                                                                             |
| Data store and retrieve:          | Record images on PC<br>30 images device log                                       |
| Communication interfaces:         | 100 MBit/s Ethernet                                                               |
| Digital inputs:                   | 4 inputs (24 V)                                                                   |
| Configurable inputs:              | Reference object selection<br>Encoder input<br>External trigger<br>External teach |
| Digital outputs:                  | 3 outputs, 24 V (B-type)                                                          |
| Configurable outputs:             | Output by logical expressions                                                     |
| Output current:                   | 100 mA                                                                            |
| Default outputs:                  | All pass<br>Any fail<br>No object detected                                        |
| Maximum encoder frequency:        | 40 kHz                                                                            |
| Control of external illumination: | 5 V TTL                                                                           |
| I/O Box extension:                | 16 outputs<br>4x inputs for object selection                                      |

## Mechanics/electronics

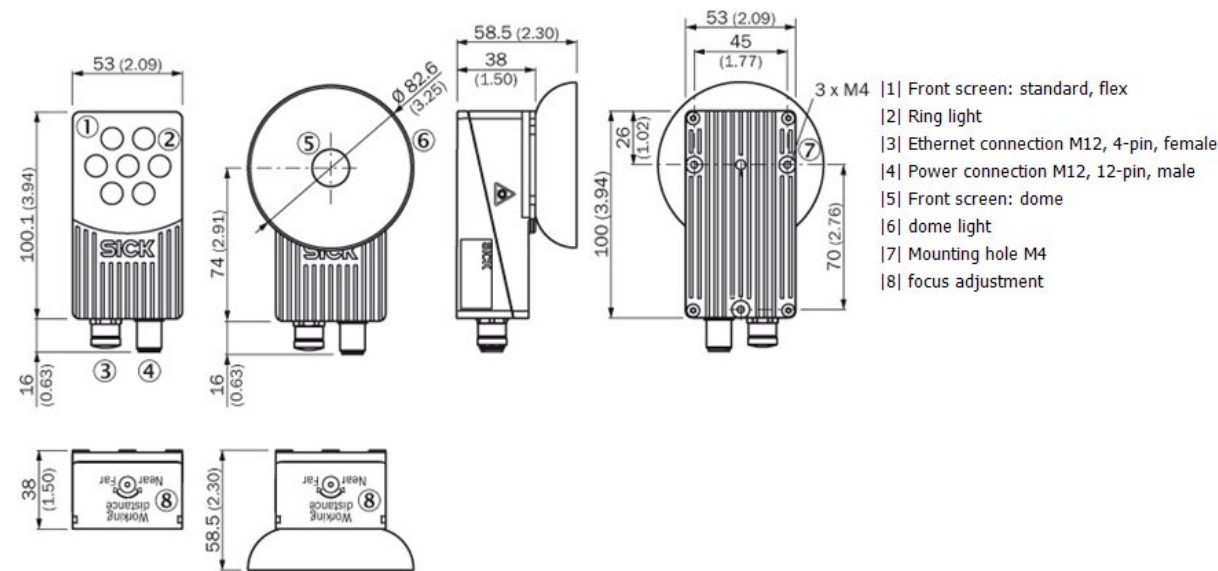
|                         |                                                           |
|-------------------------|-----------------------------------------------------------|
| Connectors:             | M12, 12-pin male connector<br>M12, 4-pin female connector |
| Supply voltage:         | 24 V DC± 20 %                                             |
| Power consumption:      | < 450 mA Without output load                              |
| Ripple:                 | < 5 Vpp                                                   |
| Enclosure rating:       | IP 67 (with front window mounted)                         |
| Housing material:       | Aluminum                                                  |
| Window material:        | PMMA                                                      |
| Weight:                 | 350 g                                                     |
| Dimensions (L x W x H): | 100 mm x 53 mm x 38 mm                                    |
| Optics:                 | Exchangeable (M12-mount)                                  |

## Ambient data

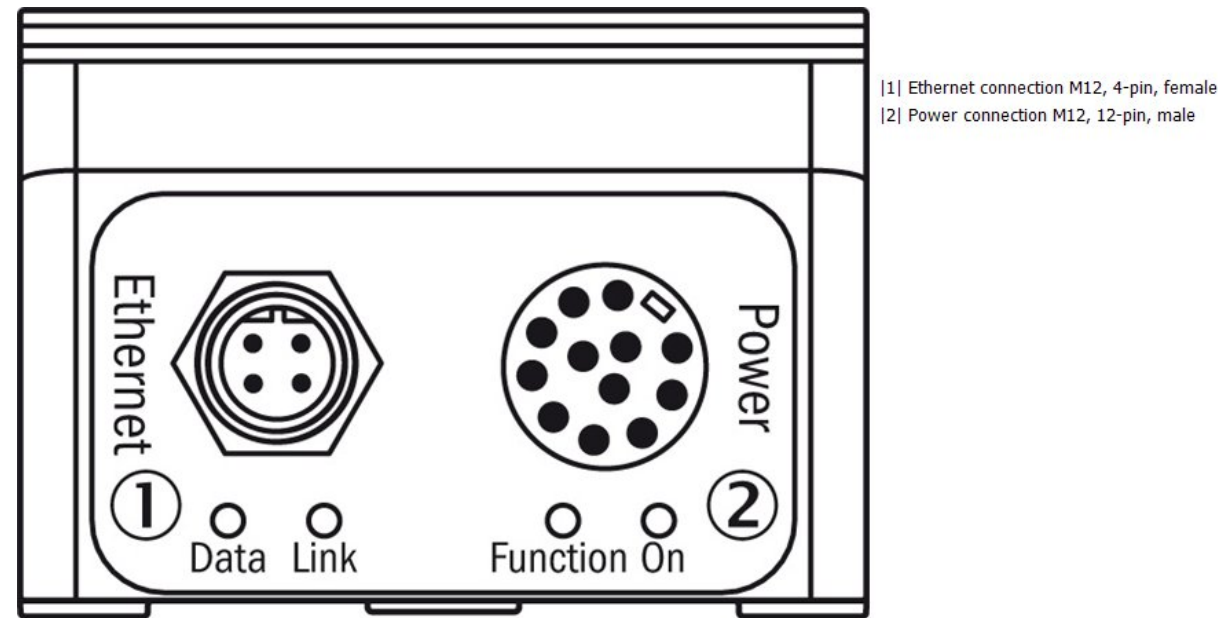
|                                               |                  |
|-----------------------------------------------|------------------|
| Shock load:                                   | EN 60068-2-27    |
| Vibration load:                               | IEC 60068-2-6    |
| Ambient operating temperature <sup>1)</sup> : | 0 °C ... 45 °C   |
| Ambient storage temperature <sup>2)</sup> :   | -20 °C ... 70 °C |

1) 2) Relative humidity: 35 % ... 85 %, 95 % at operation

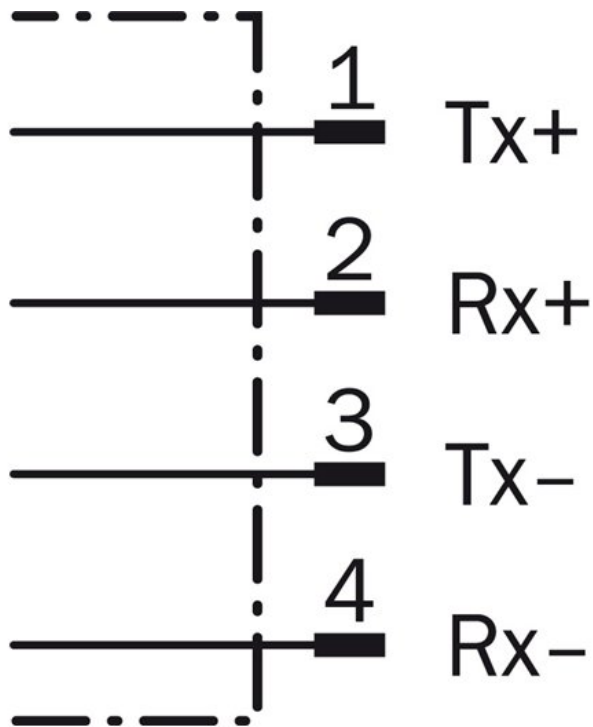
Dimensional drawing



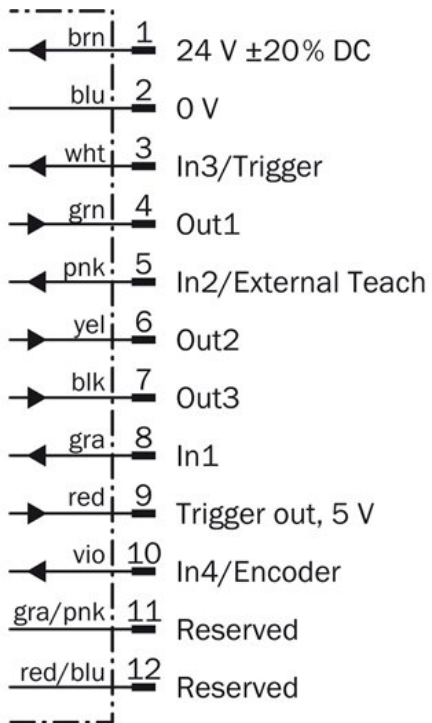
Connection type



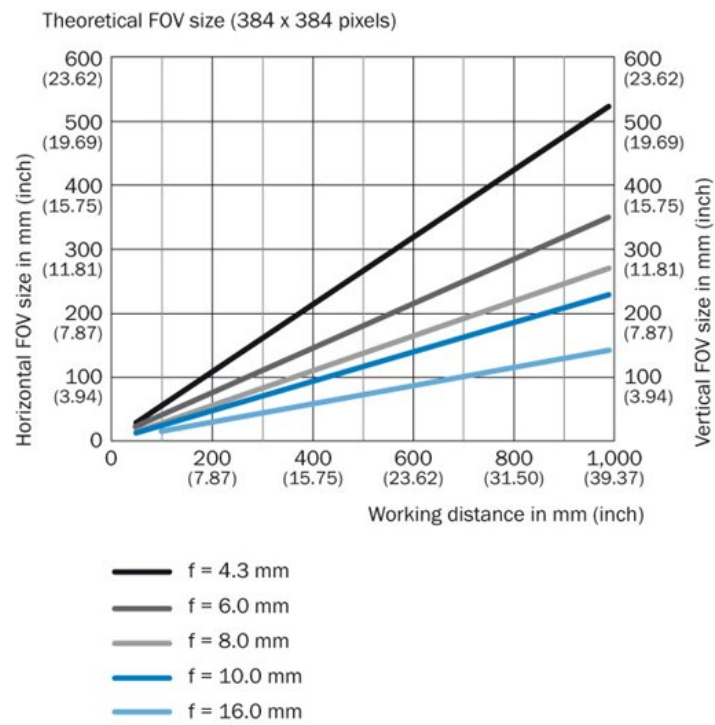
Connection diagram Ethernet



Connection diagram M12, 12-pin



Field of view



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