

Technical data sheet

Smart camera

Part no.: 50116969

LSIS 412i M43-I1-01



Figure can vary

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Technical data

Basic data

| | |
|--------|-----------|
| Series | LSIS 412i |
| Chip | CMOS |

Functions

| | |
|--------------------|---|
| Software functions | BLOB analysis (completeness monitoring) |
| | BLOB analysis (presence control) |
| | Dimension monitoring |
| | Focus adjustment |
| | Position determination |

Optical data

| | |
|--------------------------------------|----------------------|
| Working range | 50 ... 10,000 mm |
| Light source | LED, Infrared |
| Camera resolution, horizontal | 752 px |
| Camera resolution, vertical | 480 px |
| Focal length | 8 mm |
| Chip size | 1/3 in |
| Frame rate (images per second), max. | 50 pieces per second |
| Electronic shutter speed | 0.054 ... 20 ms |
| Camera type | Monochrome |

Electrical data

| | |
|-------------------------------------|------------------|
| Performance data | |
| Supply voltage U_B | 18 ... 30 V, DC |
| Power consumption, max. | 10 W |
| Inputs/outputs selectable | |
| Number of inputs/outputs selectable | 8 Piece(s) |
| Voltage type, outputs | DC |
| Switching voltage, outputs | Typ. U_B / 0 V |
| Voltage type, inputs | DC |
| Switching voltage, inputs | Typ. U_B / 0 V |

Interface

| | |
|----------|------------------|
| Type | RS 232, Ethernet |
| RS 232 | |
| Function | Process |
| Ethernet | |
| Function | Process |
| | Service |

Connection

| | |
|-----------------------|-------------------------|
| Connection 1 | |
| Function | Configuration interface |
| | Data interface |
| | Service interface |
| Type of connection | Connector |
| Designation on device | SERVICE |
| Thread size | M12 |

Connection 2

| | |
|-----------------------|----------------|
| Function | Signal IN |
| | Signal OUT |
| | Voltage supply |
| Type of connection | Connector |
| Designation on device | PWR |
| Thread size | M12 |

Connection 3

| | |
|-----------------------|----------------|
| Function | Data interface |
| | Signal IN |
| | Signal OUT |
| Type of connection | Connector |
| Designation on device | BUS OUT |
| Thread size | M12 |

Mechanical data

| | |
|-----------------------|------------------------|
| Dimension (W x H x L) | 75 mm x 55 mm x 113 mm |
| Housing material | Metal |
| Lens cover material | Plastic |
| Net weight | 500 g |

Operation and display

| | |
|-----------------------|-----------------|
| Type of configuration | Via web browser |
|-----------------------|-----------------|

Environmental data

| | |
|--------------------------------|----------------|
| Ambient temperature, operation | 0 ... +45 °C |
| Ambient temperature, storage | -20 ... +70 °C |

Certifications

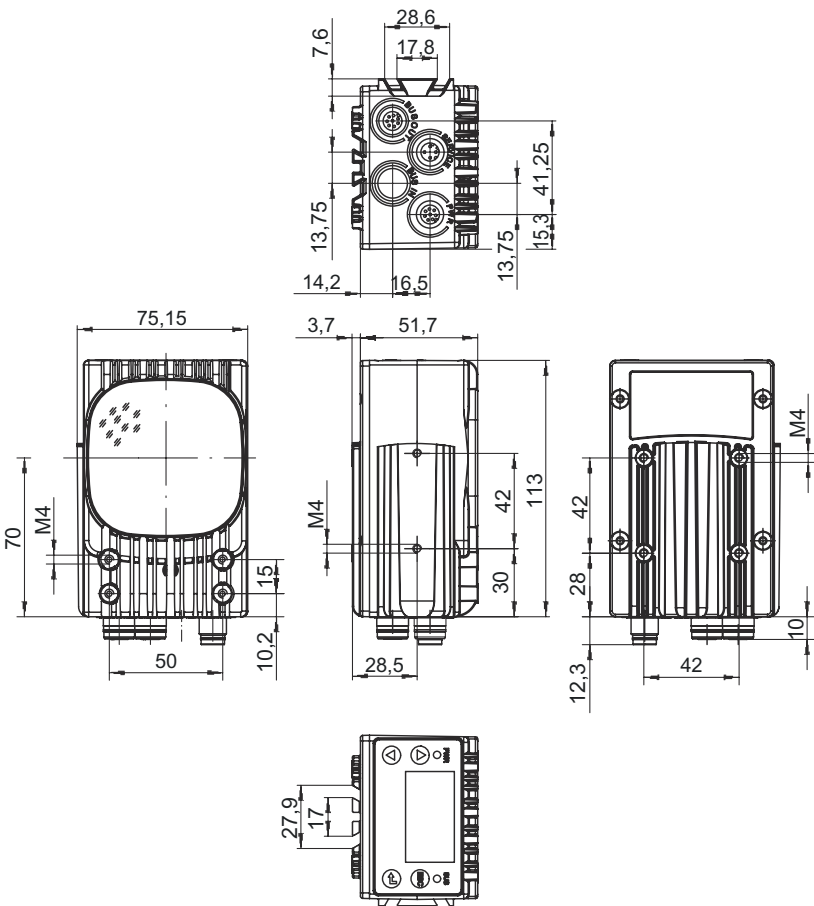
| | |
|----------------------|----------------|
| Degree of protection | IP 65 |
| | IP 67 |
| Certifications | c UL US |
| US patents | US 8,288,706 B |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 90318020 |
| eCl@ss 5.1.4 | 27310101 |
| eCl@ss 8.0 | 27310101 |
| eCl@ss 9.0 | 27310201 |
| eCl@ss 10.0 | 27310101 |
| eCl@ss 11.0 | 27310101 |
| ETIM 5.0 | EC002550 |
| ETIM 6.0 | EC002550 |
| ETIM 7.0 | EC002550 |

Dimensioned drawings

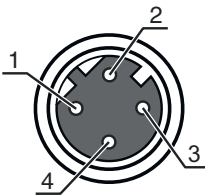
All dimensions in millimeters



Electrical connection

| Connection 1 | | SERVICE |
|--------------------|-----------|-------------------------|
| Function | | Configuration interface |
| | | Data interface |
| | | Service interface |
| Type of connection | Connector | |
| Thread size | M12 | |
| Type | Female | |
| Material | Metal | |
| No. of pins | 4 -pin | |
| Encoding | D-coded | |

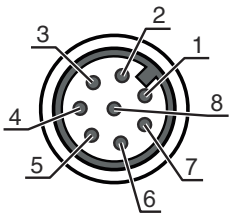
| Pin | Pin assignment |
|-----|----------------|
| 1 | TD+ |
| 2 | RD+ |
| 3 | TD- |
| 4 | RD- |



Electrical connection

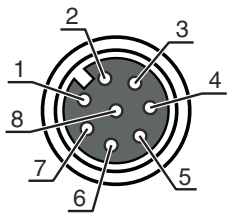
| Connection 2 | | PWR |
|--------------------|----------------|-----|
| Function | Signal IN | |
| | Signal OUT | |
| | Voltage supply | |
| | | |
| Type of connection | Connector | |
| Thread size | M12 | |
| Type | Male | |
| Material | Metal | |
| No. of pins | 8 -pin | |
| Encoding | A-coded | |

| Pin | Pin assignment |
|-----|----------------|
| 1 | VIN |
| 2 | IO1 |
| 3 | GND |
| 4 | IO2 |
| 5 | IO3 |
| 6 | IO4 |
| 7 | n.c. |
| 8 | FE |



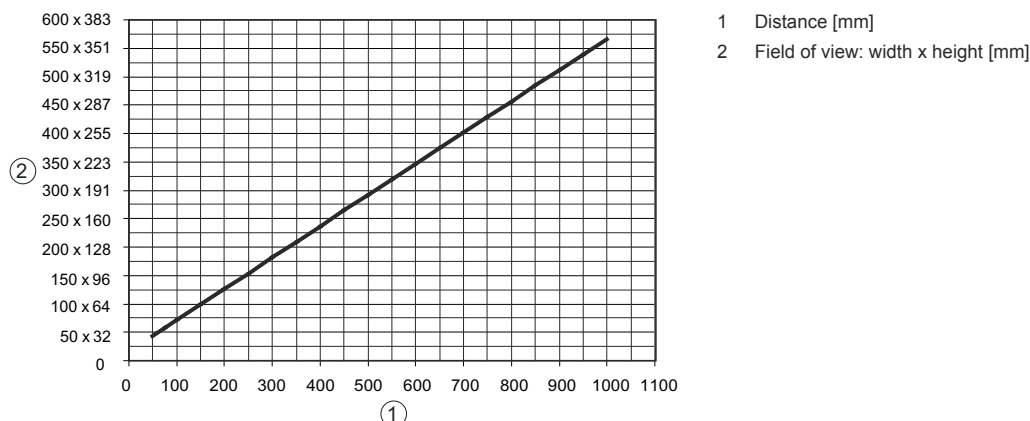
| Connection 3 | | BUS OUT |
|--------------------|----------------|---------|
| Function | Data interface | |
| | Signal IN | |
| | Signal OUT | |
| | | |
| Type of connection | Connector | |
| Thread size | M12 | |
| Type | Female | |
| Material | Metal | |
| No. of pins | 8 -pin | |
| Encoding | A-coded | |

| Pin | Pin assignment |
|-----|----------------|
| 1 | IO5 |
| 2 | IO6 |
| 3 | GND |
| 4 | IO7 |
| 5 | IO8 |
| 6 | RS 232-RX |
| 7 | RS 232-TX |
| 8 | FE |



Diagrams

Relationship between working distance and field of view size



Operation and display


| LED | Display | Meaning |
|-------|--------------------------|---------------------------------|
| 1 PWR | Off | No supply voltage |
| | Green, flashing | Device ok, initialization phase |
| | Green, continuous light | Device OK |
| | Orange, continuous light | Service operation |
| | Red, flashing | Device OK, warning set |
| | Red, continuous light | Device error |
| 2 BUS | Off | No supply voltage |
| | Green, flashing | BUS initialization |
| | Green, continuous light | BUS OK |
| | Red, flashing | Bus error |

Part number code



Part designation: **LSIS AABB CCD-EF-GG**

| | |
|-------------|--|
| LSIS | Operating principle Smart camera |
| AA | Functions 41: BLOB analysis 42: Code reading 46: BLOB analysis, code reading, measuring tool 47: Compartment fine positioning |
| BB | Interface 2: RS 232 / Ethernet + digital I/Os |
| CC | Camera chip / resolution range M4: Monochrome / 752 x 480px |
| D | Lens 3: 8 mm 5: 16 mm 9: depending on the used interchangeable lens |
| E | Illumination I: infrared light M: RGBW W: white X: external illumination |

Part number code


| | |
|--|--|
| F | Illumination type 1: diffuse front illumination 9: none |
| GG | Version 01: plastic n/a: glass H: with heating |
| Note | |
|  | A list with all available device types can be found on the Leuze website at www.leuze.com . |

Notes

| | |
|--|---|
|  Observe intended use! | |
|  | <ul style="list-style-type: none"> This product is not a safety sensor and is not intended as personnel protection. The product may only be put into operation by competent persons. Only use the product in accordance with its intended use. |

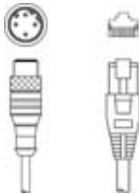
Accessories

Connection technology - Connection cables


| | Part no. | Designation | Article | Description |
|---|----------|---------------------|------------------|--|
|  | 50135128 | KD S-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |
| | 50135074 | KS ET-M12-4A-P7-050 | Connection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |
| | 50135139 | KS S-M12-8A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Male, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |

Accessories

Connection technology - Interconnection cables

| | Part no. | Designation | Article | Description |
|--|----------|-----------------------------|-----------------------|--|
|  | 50135081 | KSS ET-M12-4A-RJ45-A-P7-050 | Interconnection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |

Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|--|----------|-------------|-----------------|---|
|  | 50027375 | BT 56 | Mounting device | Functions: Static applications Design of mounting device: Mounting system Fastening, at system: For 16 mm rod, For 18 mm rod, For 20 mm rod Mounting bracket, at device: Clampable Material: Metal Tightening torque of the clamping jaws: 8 N·m |

Services

| | Part no. | Designation | Article | Description |
|--|----------|-------------|------------------|---|
|  | S981014 | CS30-S-110 | Start-up support | Details: Performed at location of customer's choosing, duration: max. 10 hours. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. Restrictions: No mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment. |
|  | S981019 | CS30-T-110 | Product training | Details: Location and content to be agreed upon, duration: max. 10 hours. Conditions: Price not including travel costs and, if applicable, accommodation expenses. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure. |

Note



A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.