VSPM-6B2413 Universal Robots Kit

Inspector

2D MACHINE VISION

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
VSPM-6B2413 Universal Robots Kit	1097255

Included in delivery: Mounting plate (1), Inspector Flex visible block filter (1), SSL-2J04-G05MR (1), USB stick PIM60 (1), VSPM-6B2413 (1), YF2A8B-050XXXXLEBX (1), OBJ-B04320BA (1), OBJ-B06025BA (1)

Other models and accessories ➔ www.sick.com/Inspector

Detailed technical data

Features

Technology	2D snapshot
Product category	Configurable
Toolkit	Object locator Pixel counter Edge pixel counter Pattern Blob Finder Polygon Edge Circle Distance Angle Edge counter Find maximum
Sensor	CMOS matrix sensor, grayscale values
Optical focus	Adjustable focus (manually)
Calibration	Perspective and lens distortion correction, mm results
Robot coordinate alignment	✓
Working distance	≥ 50 mm
LED class	Risk group 1 (low risk, IEC62471 : 2006)
Offline support	Emulator
Lens	S-mount
Optical format	1/3"
Task	Detecting - Standard objects Measuring - Dimension, contour and volume Measuring - Number Identifying - OCR Identifying - Pattern Determining position - 2D position determination

Mechanics/electronics

Connection type	M12, 12-pin male connector

[1] With front window mounted.

	M12, 4-pin female connector
Supply voltage	24 V DC, ± 20 %
Ripple	< 5 V$_{pp}$
Current consumption	< 450 mA, without output load
Enclosure rating	IP67 [1]
Housing material	Aluminum
Dimensions (L x W x H)	100 mm x 53 mm x 38 mm

[1] With front window mounted.

Performance

Sensor resolution	640 px x 480 px
Scan/frame rate	40 fps [1]
Number of inspections	64
Reference images	32 objects

[1] Max. 200 fps.

Interfaces

Ethernet	✓, TCP/IP
Data transmission rate	100 Mbit/s
EtherNet/IP™	✓
Data transmission rate	100 Mbit/s
Operator interfaces	Web server
Configuration software	SOPAS ET
Data storage and retrieval	Log for 30 images, record images on PC, store images to FTP
Ethernet communication	Web API
Digital input	4 inputs (24 V)
Configurable inputs	External trigger, encoder input, External teach, reference object selection
Digital output	3 digital outputs, 24 V (B-type)
Configurable outputs	Output by logical expressions, Additional image storage possibility via FTP
Output current	≤ 100 mA
Standard outputs	No object detected, Everything OK, Detail error
Maximum encoder frequency	40 kHz
External illumination	5 V TTL
I/O box extension	5 x inputs for object selection, 16 outputs

Ambient data

Shock load	EN 60068-2-27
Vibration load	IEC 60068-2-6
Ambient operating temperature	0 °C ... +45 °C [1]
Storage temperature	−20 °C ... +70 °C [1]

[1] Relative humidity: 35% ... 85%, 95% in storage.

Classifications

ECLASS 5.0	27310205

ECLASS 5.1.4	27310205
ECLASS 6.0	27310205
ECLASS 6.2	27310205
ECLASS 7.0	27310205
ECLASS 8.0	27310205
ECLASS 8.1	27310205
ECLASS 9.0	27310205
ECLASS 10.0	27310205
ECLASS 11.0	27310205
ECLASS 12.0	27310205
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC 16.0901	43211731

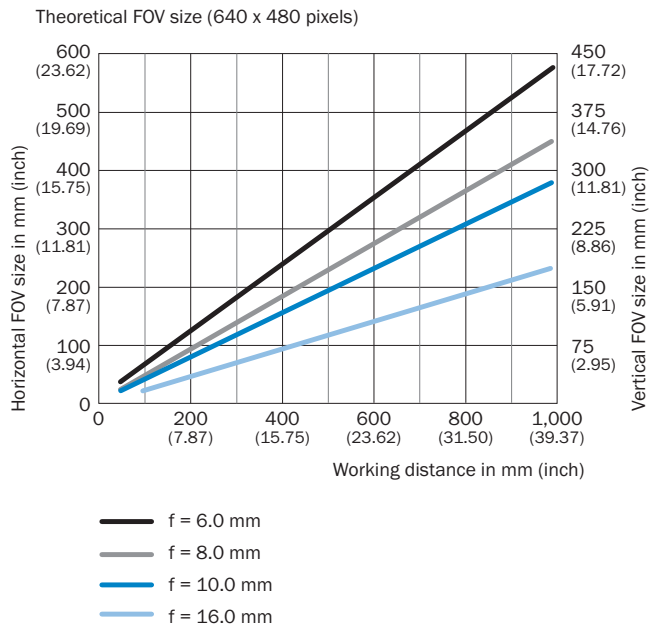## Dimensional drawing (Dimensions in mm (inch))

Standard
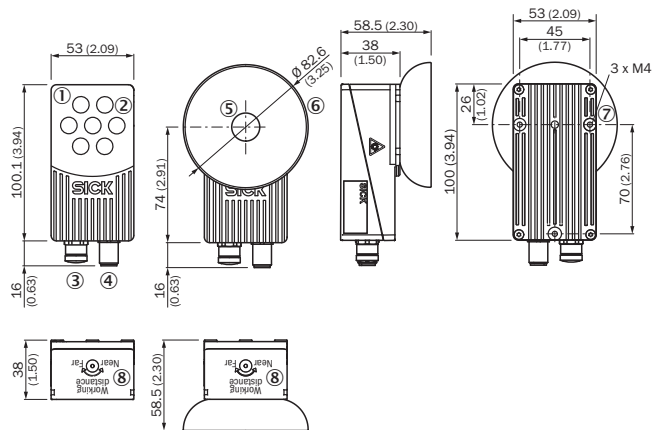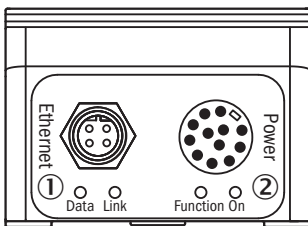

① Front screen: standard, flex
② Ring lighting
③ Ethernet connection M12, 4-pin, female
④ Power connection M12, 12-pin, male
⑤ Front screen: dome
⑥ Dome light
⑦ Mounting hole M4
⑧ Focus

Field of view

Theoretical FOV size (640 x 480 pixels)

f = 6.0 mm
f = 8.0 mm
f = 10.0 mm
f = 16.0 mm

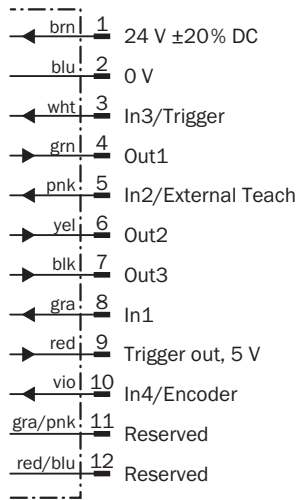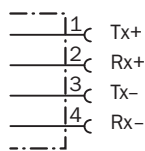## Connection type

① Ethernet connection M12, 4-pin, female
② Power connection M12, 12-pin, male

Connection diagram

M12 connection diagram, 12-pin

Pin	Wire	Signal
1	brn	24 V ±20 % DC
2	blu	0 V
3	wht	In3/Trigger
4	grn	Out1
5	pnk	In2/External Teach
6	yel	Out2
7	blk	Out3
8	gra	In1
9	red	Trigger out, 5 V
10	vio	In4/Encoder
11	gra/pnk	Reserved
12	red/blu	Reserved

Ethernet connection diagram

Pin	Signal
1	Tx+
2	Rx+
3	Tx−
4	Rx−

Recommended services

Additional services ➜ www.sick.com/Inspector

	Type	Part no.
Commissioning		
• **Product area:** 2D machine vision • **Range of services:** Inspection of connection, fine adjustment, optimization of parameters of SICK product as well as tests, set-up of previously defined functions of image settings, object locator, detailed inspections, output settings and results • **Duration:** Additional work will be invoiced separately	Inspector commissioning	1612238
Maintenance		
• **Product area:** 2D machine vision • **Range of services:** Inspection, analysis and restoring of defined functions, set-up of previously defined functions of image settings, object locator, detailed inspections, output settings and results • **Duration:** Additional work will be invoiced separately	Inspector maintenance	1612242
Extended warranty		
• **Product area:** Machine vision, LiDAR sensors, safety camera sensors, Safety laser scanners, Safety radar sensors, Radar sensors, Fixed mount barcode scanners, Image-based code readers, RFID, Mobile handheld scanners • **Range of services:** The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery). • **Duration:** Five-year warranty from delivery date.	Extended warranty for a total of five years from delivery date	1680671

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

WORLDWIDE PRESENCE:

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