All in one Vision Sensor Smart Camera

FQ2 Series

CSM_FQ2_DS_E_11_4

Smart Cameras: The New Standard for Image Inspections

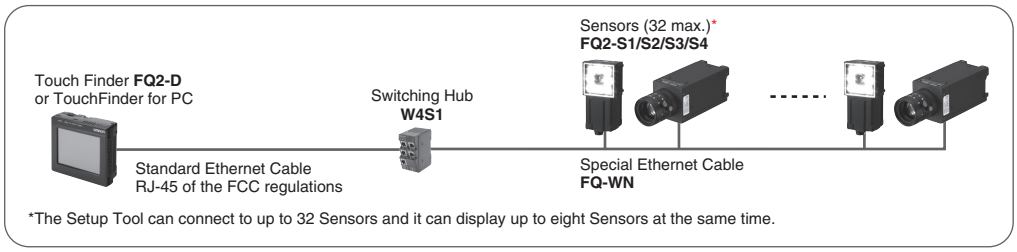
- All in one Vision Sensor
- Expanded performance and functionality
- A Lineup that fits a wide range of equipment

⚠ Be sure to read *"Safety Precautions"* on page 9.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

System Configuration

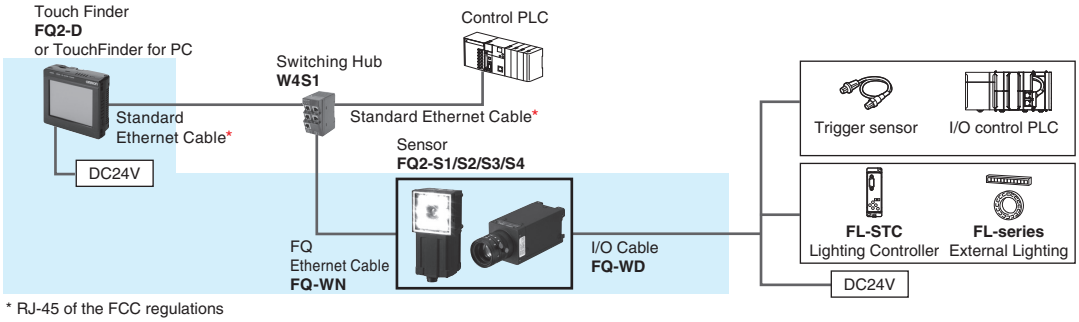
Up to 32 Sensors can be set up and monitored from a single Touch Finder or TouchFinder for PC.
Various types of Sensors can be used at the same time.
However, I/O type and wiring method vary depending on the Sensor, so select the necessary devices.



Note: If you register as a member after purchasing a Sensor, you can download free setup software TouchFinder for PC that runs on a PC and can be used in place of Touch Finder.
Refer to the member registration sheet for details.

Ethernet (EtherNet/IP, No-protocol, or PLC Link) Connection

FQ2-S1 FQ2-S2
FQ2-S3 FQ2-S4

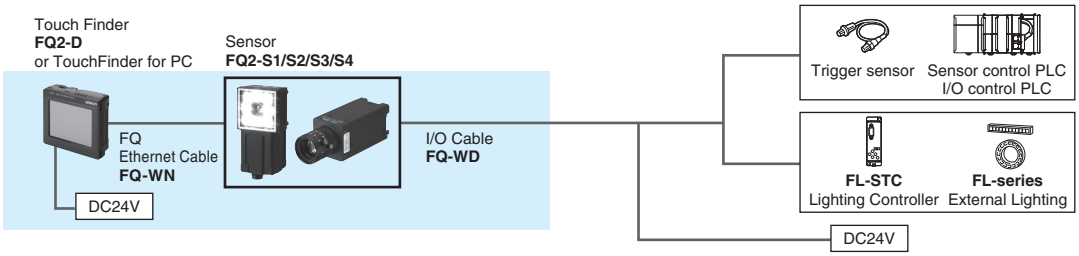


* RJ-45 of the FCC regulations

Parallel Interface Connection

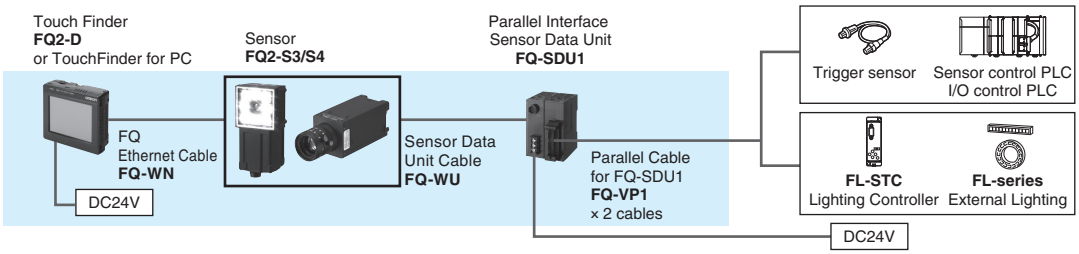
Connection with Standard Parallel Interface of the Sensor

FQ2-S1 FQ2-S2
FQ2-S3 FQ2-S4



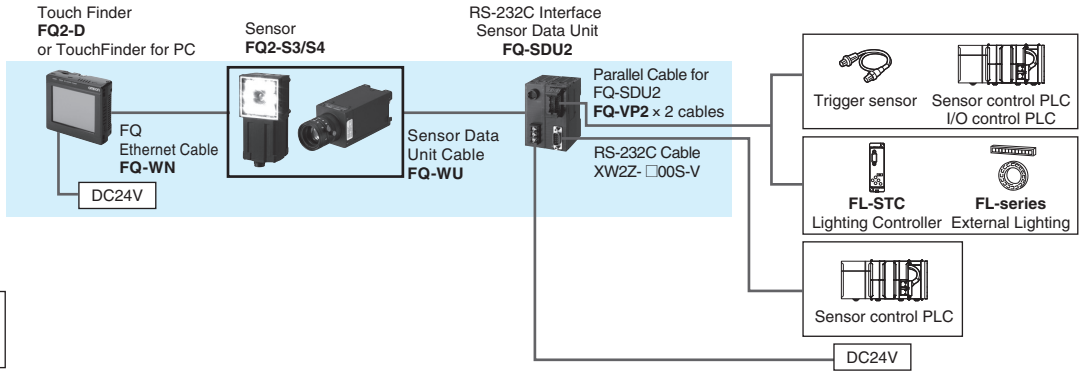
Connection through a Parallel Interface Sensor Data Unit

FQ2-S1 FQ2-S2
FQ2-S3 FQ2-S4



RS-232C Serial Connection

FQ2-S1 FQ2-S2
FQ2-S3 FQ2-S4



Model compatible with communications interface

	Compatible
	Not compatible

Ordering Information

Sensor

Inspection Model

FQ2-S1 Series [Single-function Type]

Field of view	Number of pixels	Color		Field of view/ Installation distance
		NPN	PNP	
Narrow View	350,000 pixels	FQ2-S10010F	FQ2-S15010F	Refer to figure **1** on p.4
Standard View		FQ2-S10050F	FQ2-S15050F	Refer to figure **2** on p.4
Wide View (Long-distance)		FQ2-S10100F	FQ2-S15100F	Refer to figure **3** on p.4
Wide View (Short-distance)		FQ2-S10100N	FQ2-S15100N	Refer to figure **4** on p.4

FQ2-S2 Series [Standard Type]

Field of view	Number of pixels	Color		Field of view/ Installation distance
		NPN	PNP	
Narrow View	350,000 pixels	FQ2-S20010F	FQ2-S25010F	Refer to figure **1** on p.4
Standard View		FQ2-S20050F	FQ2-S25050F	Refer to figure **2** on p.4
Wide View (Long-distance)		FQ2-S20100F	FQ2-S25100F	Refer to figure **3** on p.4
Wide View (Short-distance)		FQ2-S20100N	FQ2-S25100N	Refer to figure **4** on p.4

FQ2-S3 Series [High-resolution Type]

Field of view	Number of pixels	Color		Monochrome		Field of view/ Installation distance
		NPN	PNP	NPN	PNP	
Narrow View	760,000 pixels	FQ2-S30010F-08	FQ2-S35010F-08	FQ2-S30010F-08M	FQ2-S35010F-08M	Refer to figure **5** on p.4
Standard View		FQ2-S30050F-08	FQ2-S35050F-08	FQ2-S30050F-08M	FQ2-S35050F-08M	Refer to figure **6** on p.4
Wide View (Long-distance)		FQ2-S30100F-08	FQ2-S35100F-08	FQ2-S30100F-08M	FQ2-S35100F-08M	Refer to figure **7** on p.4
Wide View (Short-distance)		FQ2-S30100N-08	FQ2-S35100N-08	FQ2-S30100N-08M	FQ2-S35100N-08M	Refer to figure **8** on p.4
C-mount	1.3 million pixels	FQ2-S30-13	FQ2-S35-13	FQ2-S30-13M	FQ2-S35-13M	Refer to optical chart on p.12.

Inspection / ID Model

FQ2-S4 Series [Standard Type]

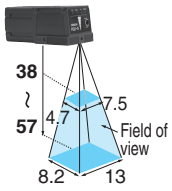
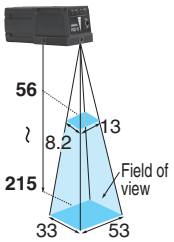
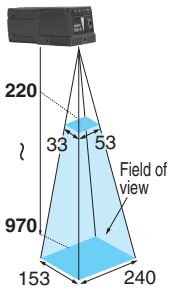
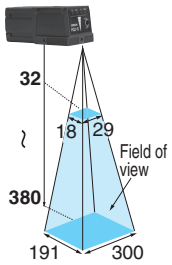
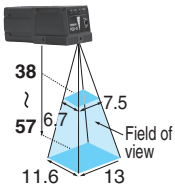
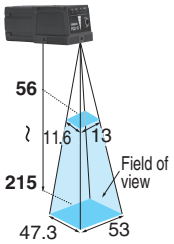
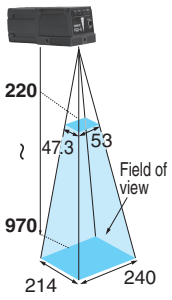
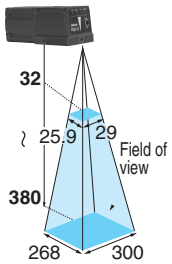
Field of view	Number of pixels	Color		Monochrome		Field of view/ Installation distance
		NPN	PNP	NPN	PNP	
Narrow View	350,000 pixels	FQ2-S40010F	FQ2-S45010F	FQ2-S40010F-M	FQ2-S45010F-M	Refer to figure **1** on p.4
Standard View		FQ2-S40050F	FQ2-S45050F	FQ2-S40050F-M	FQ2-S45050F-M	Refer to figure **2** on p.4
Wide View (Long-distance)		FQ2-S40100F	FQ2-S45100F	FQ2-S40100F-M	FQ2-S45100F-M	Refer to figure **3** on p.4
Wide View (Short-distance)		FQ2-S40100N	FQ2-S45100N	FQ2-S40100N-M	FQ2-S45100N-M	Refer to figure **4** on p.4

[High-resolution Type]

Field of view	Number of pixels	Color		Monochrome		Field of view/ Installation distance
		NPN	PNP	NPN	PNP	
Narrow View	760,000 pixels	FQ2-S40010F-08	FQ2-S45010F-08	FQ2-S40010F-08M	FQ2-S45010F-08M	Refer to figure **5** on p.4
Standard View		FQ2-S40050F-08	FQ2-S45050F-08	FQ2-S40050F-08M	FQ2-S45050F-08M	Refer to figure **6** on p.4
Wide View (Long-distance)		FQ2-S40100F-08	FQ2-S45100F-08	FQ2-S40100F-08M	FQ2-S45100F-08M	Refer to figure **7** on p.4
Wide View (Short-distance)		FQ2-S40100N-08	FQ2-S45100N-08	FQ2-S40100N-08M	FQ2-S45100N-08M	Refer to figure **8** on p.4
C-mount	1.3 million pixels	FQ2-S40-13	FQ2-S45-13	FQ2-S40-13M	FQ2-S45-13M	Refer to optical chart on p.12.

Field of view/Installation distance

(Unit: mm)

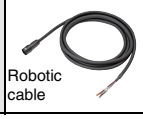
Field of view	Narrow View	Standard View	Wide View (Long-distance)	Wide View (Short-distance)
Appearance				
350,000 pixels Type	Figure **1** 	Figure **2** 	Figure **3** 	Figure **4** 
760,000 pixels Type	Figure **5** 	Figure **6** 	Figure **7** 	Figure **8** 

Touch Finder

Type	Appearance	Model
DC power supply		FQ2-D30
AC/DC/battery		FQ2-D31 (See note.)

Note: AC Adapter and Battery are sold separately.

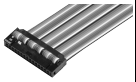
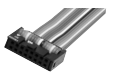
Cables

Type	Appearance	Cable length	Model
FQ Ethernet Cables (connect Sensor to Touch Finder, Sensor to PC)		2m	FQ-WN002
		5m	FQ-WN005
		10m	FQ-WN010
		20m	FQ-WN020
I/O Cables		2m	FQ-WD002
		5m	FQ-WD005
		10m	FQ-WD010
		20m	FQ-WD020

Sensor Data Unit (FQ2-S3/S4 only)

Type	Appearance	Output type	Model
Parallel Interface		NPN	FQ-SDU10
		PNP	FQ-SDU15
RS-232C Interface		NPN	FQ-SDU20
		PNP	FQ-SDU25

Cables for Sensor Data Unit

Type	Appearance	Cable length	Model
Sensor Data Unit Cable		2m	FQ-WU002
		5m	FQ-WU005
		10m	FQ-WU010
		20m	FQ-WU020
Parallel Cable for FQ-SDU1*		2m	FQ-VP1002
		5m	FQ-VP1005
		10m	FQ-VP1010
Parallel Cable for FQ-SDU2*		2m	FQ-VP2002
		5m	FQ-VP2005
		10m	FQ-VP2010
RS-232C Cable for FQ-SDU2		2m	XW2Z-200S-V
		5m	XW2Z-500S-V

✻When using FQ-SDU□□ , 2 Cables are required for all I/O signals.

Accessories

Application	Appearance	Name	Model
For Sensor		Mounting Bracket *1	FQ-XL
		Mounting Bracket for high-precision sensing *2	FQ-XL2
		Mounting Base for C-mount type *3	FQ-XLC
		Polarizing Filter Attachment *1	FQ-XF1
For Touch Finder		Panel Mounting Adapter	FQ-XPM
		AC Adapter (for AC/DC/battery model) *4	FQ-A□
		Battery *5 (for AC/DC/battery model)	FQ-BAT1
		Touch Pen *6	FQ-XT
		Strap	FQ-XH
		SD Card (2 GB)	HMC-SD291
		SD Card (4 GB)	HMC-SD491

Industrial Switching Hubs (Recommended)

Appearance	Number of ports	Failure detection	Current consumption	Model
	3	None	0.22 A	W4S1-03B
	5	None	0.22 A	W4S1-05B
		Supported		W4S1-05C

✻1 Included with Integrated Sensor.
✻2 A mounting Bracket with improved resistance to vibrations and other external stresses that cause displacement of the optical axis and field of view.
✻3 Included with Sensor with C-mount.
✻4 AC Adapters for Touch Finder with DC / AC / Battery Power Supply. Select the model for the country in which the Touch Finder will be used.

Plug Type	Voltage	Certified standards	Model
A	125 V max.	PSE	FQ-AC1
		UL/CSA	FQ-AC2
	250 V max.	CCC mark	FQ-AC3
C	250 V max.	---	FQ-AC4

✻5 The Battery uses a lithium ion secondary battery. Confirm any applicable laws and regulations in the destination country if you export the Battery.
✻6 Enclosed with Touch Finder.

Lenses for C-mount Camera

Refer to optical chart on p.12 for selection of a lens.

High-resolution, Low-distortion Lenses

Model	3Z4S-LE SV-0614H	3Z4S-LE SV-0814H	3Z4S-LE SV-1214H	3Z4S-LE SV-1614H	3Z4S-LE SV-2514H	3Z4S-LE SV-3514H	3Z4S-LE SV-5014H	3Z4S-LE SV-7525H	3Z4S-LE SV-10028H
Appearance/ Dimensions (mm)									
Focal length	6mm	8mm	12mm	16mm	25mm	35mm	50mm	75mm	100mm
Brightness	F1.4	F1.4	F1.4	F1.4	F1.4	F1.4	F1.4	F2.5	F2.8
Filter size	M40.5 P0.5	M35.5 P0.5	M27 P0.5	M27 P0.5	M27 P0.5	M35.5 P0.5	M40.5 P0.5	M34.0 P0.5	M37.5 P0.5

Extension Tubes

Model	3Z4S-LE SV-EXR
Contents	Set of 7 tubes (40 mm, 20 mm,10 mm, 5 mm, 2.0 mm,1.0 mm, and 0.5 mm) Maximum outer diameter: 30 mm dia.

✻ Do not use the 0.5-mm, 1.0-mm, and 2.0-mm Extension Tubes attached to each other. Since these ExtensionTubes are placed over the threaded section of the Lens or other Extension Tube, the connection may loosen when more than one 0.5-mm, 1.0- mm or 2.0-mm Extension Tube are used together.
✻ Reinforcement is required to protect against vibration when Extension Tubes exceeding 30 mm are used.

Ratings and Performance

Sensor [Inspection Model FQ2-S1/S2/S3 Series]

Item		Single-function type	Standard type	High-resolution type			
Model	NPN	FQ2-S10□□□□	FQ2-S20□□□□	FQ2-S30□□□□-08	FQ2-S30□□□□-08M	FQ2-S30-13	FQ2-S30-13M
	PNP	FQ2-S15□□□□	FQ2-S25□□□□	FQ2-S35□□□□-08	FQ2-S35□□□□-08M	FQ2-S35-13	FQ2-S35-13M
Field of view		Refer to Ordering Information on p.3. (Tolerance (field of view): ±10% max.)				Select a lens according to the field of view and installation distance. Refer to the optical chart on p.12.	
Installation distance							
Main functions	Inspection items	Shape search III, shape search II, search, sensitive search, area, color data, edge position, edge pitch, edge width, and labeling					
	Number of simultaneous measurements	1	32				
	Position compensation	Supported (360° Model position compensation, Edge position compensation, Linear correction)					
	Number of registered scenes	8 *	32 *				
	Calibration	Supported					
Image input	Image processing method	Real color			Monochrome	Real color	Monochrome
	Image filter	High dynamic range (HDR), image adjustment (Color Gray Filter, Weak smoothing, Strong smoothing, Dilate, Erosion, Median, Extract edges, Extract horizontal edges, Extract vertical edges, Enhance edges, Background suppression), polarizing filter (attachment), and white balance (Sensors with Color Cameras only), Brightness Correction					
	Image elements	1/3-inch color CMOS		1/2-inch color CMOS	1/2-inch Monochrome CMOS	1/2-inch color CMOS	1/2-inch Monochrome CMOS
	Shutter	Built-in lighting ON: 1/250 to 1/50,000 s Built-in lighting OFF: 1/1 to 1/50,000 s		Built-in lighting ON: 1/250 to 1/60,000 s Built-in lighting OFF: 1/1 to 1/4,155 s		1/1 to 1/4,155 s	
	Processing resolution	752 × 480		928 × 828		1280 × 1024	
	Partial input function	Supported horizontally only.		Supported horizontally and vertically			
	Image display	Zoom-in/Zoom-out/Fit, Rotating by 180°					
	Lens mounts	---				C-mount	
Lighting	Lighting method	Pulse				---	
	Lighting color	White				---	
Data logging	Measurement data	In Sensor: 1,000 items (If a Touch Finder is used, results can be saved up to the capacity of an SD card.)					
	Images	In Sensor: 20 images (If a Touch Finder is used, images can be saved up to the capacity of an SD card.)					
Auxiliary function		Statistical data, Test Measurements, I/O monitor, Password function, Simulation software, Sensor error history, Calibration, Math (arithmetic, calculation functions, trigonometric functions, and logic functions)					
Measurement trigger		External trigger (single or continuous) Communications trigger (Ethernet TCP no-protocol, Ethernet UDP no-protocol, Ethernet FINS/TCP no-protocol, EtherNet/IP, PLC Link, or PROFINET)					
I/O specifications	Input signals	7 signals • Single measurement input (TRIG) • Control command input (IN0 to IN5)					
	Output signals	3 signals • Control output (BUSY) • Overall judgement output (OR) • Error output (ERROR) **Note:** The assignments of the three output signals (OUT0 to OUT2) can also be changed to the following: • READY • RUN • STG (Strobe trigger) • OR0 (Item0 judgement) to OR31 (Item31 judgement) • Exp.0 judgement to Exp.31 judgement					
	Ethernet specifications	100Base-TX/10Base-T					
	Communications	Ethernet TCP no-protocol, Ethernet UDP no-protocol, Ethernet FINS/TCP no-protocol, EtherNet/IP, PLC Link, or PROFINET					
	I/O expansion	---	---	Possible by connecting FQ-SDU1_ Sensor Data Unit. 11 inputs and 24 outputs			
	RS-232C	---	---	Possible by connecting FQ-SDU2_ Sensor Data Unit. 8 inputs and 7 outputs			
Ratings	Power supply voltage	21.6 to 26.4 VDC (including ripple)					
	Current consumption	2.4 A max.				0.3 A max.	
Environmental immunity	Ambient temperature range	Operating: 0 to 50°C Storage: -25 to 65°C (with no icing or condensation)		Operating: 0 to 40°C Storage: -25 to 65°C (with no icing or condensation)			
	Ambient humidity range	Operating and storage: 35% to 85% (with no condensation)					
	Ambient atmosphere	No corrosive gas					
	Vibration resistance (destruction)	10 to 150 Hz, single amplitude: 0.35 mm, X/Y/Z directions 8 min each, 10 times					
	Shock resistance (destruction)	150 m/s^2 3 times each in 6 direction (up, down, right, left, forward, and backward)					
	Degree of protection	IEC 60529 IP67 (Except when Polarizing Filter Attachment is mounted or connector cap is removed.)				IEC 60529 IP40	
Materials		Sensor: PBT, PC, SUS Mounting Bracket: PBT Polarizing Filter Attachment: PBT, PC Ethernet connector: Oil-resistance vinyl compound I/O connector: Lead-free heat-resistant PVC				Cover: Zinc-plated steel, Thickness: 0.6 mm Case: Aluminum diecast alloy (ADC-12) Mounting base: Polycarbonate ABS	
Weight		Narrow View/Standard View:Approx.160 g Wide View:Approx.150 g				Approx. 160 g without base, Approx. 185 g with base	
Accessories included with sensor		Mounting Bracket (FQ-XL) (1) Polarizing Filter Attachment (FQ-XF1) (1) Instruction Manual, Member Registration Sheet				Mounting Base (FQ-XLC) (1) Mounting Screw (M3 × 8mm) (4) Instruction Manual, Member Registration Sheet	
LED class		Risk Group 2 (IEC62471)				---	
Applicable standards		EC Directive No.2004/108/EC and EN standard EN 61326-1					

✻ The maximum number of registerable scenes depends on settings due to restrictions on memory.

Sensor [Inspection/ID Model FQ2-S4 Series]

Item		Inspection/ID Model					
Model	NPN	FQ2-S40□□□□	FQ2-S40□□□□-M	FQ2-S40□□□□-08	FQ2-S40□□□□-08M	FQ2-S40□□□□-13	FQ2-S40□□□□-13M
	PNP	FQ2-S45□□□□	FQ2-S45□□□□-M	FQ2-S45□□□□-08	FQ2-S45□□□□-08M	FQ2-S45□□□□-13	FQ2-S45□□□□-13M
Field of view		Refer to Ordering Information on p.3. (Tolerance (field of view): ±10% max.)				Select a lens according to the field of view and installation distance. Refer to the optical chart on p.12.	
Installation distance							
Main functions	Inspection items	Search, shape search II, sensitive search, area, color data, edge position, edge pitch, edge width, labeling, OCR *1, Bar code *2, 2D-code *2, 2D-code (DMP) *3, and Model dictionary					
	Number of simultaneous measurements	32					
	Position compensation	Supported (360º Model position compensation, Edge position compensation, Linear correction)					
	Number of registered scenes	32 *4					
	Calibration	Supported					
	Retry function	Normal retry, Exposure retry, Scene retry, Trigger retry					
Image input	Image processing method	Real color	Monochrome	Real color	Monochrome	Real color	Monochrome
	Image filter	High dynamic range (HDR), image adjustment (Color Gray Filter, Weak smoothing, Strong smoothing, Dilate, Erosion, Median, Extract edges, Extract horizontal edges, Extract vertical edges, Enhance edges, Background suppression), polarizing filter (attachment), and white balance (Sensors with Color Cameras only), Brightness Correction					
	Image elements	1/3-inch color CMOS	1/3-inch Monochrome CMOS	1/2-inch color CMOS	1/2-inch Monochrome CMOS	1/2-inch color CMOS	1/2-inch Monochrome CMOS
	Shutter	Built-in lighting ON: 1/250 to 1/50,000 s Built-in lighting OFF: 1/1 to 1/50,000 s		Built-in lighting ON: 1/250 to 1/60,000 s Built-in lighting OFF: 1/1 to 1/4,155 s		1/1 to 1/4,155 s	
	Processing resolution	752 × 480		928 × 828		1280 × 1024	
	Partial input function	Supported horizontally only.		Supported horizontally and vertically			
	Image display	Zoom-in/Zoom-out/Fit, Rotating by 180º					
	Lens mounts	---				C-mount	
Lighting	Lighting method	Pulse				---	
	Lighting color	White				---	
Data logging	Measurement data	In Sensor: 1,000 items (If a Touch Finder is used, results can be saved up to the capacity of an SD card.)					
	Images	In Sensor: 20 images (If a Touch Finder is used, images can be saved up to the capacity of an SD card.)					
Auxiliary function		Statistical data, Test Measurements, I/O monitor, Password function, Simulation software, Sensor error history, Calibration, Math (arithmetic, calculation functions, trigonometric functions, and logic functions)					
Measurement trigger		External trigger (single or continuous) Communications trigger (Ethernet TCP no-protocol, Ethernet UDP no-protocol, Ethernet FINS/TCP no-protocol, EtherNet/IP, PLC Link, or PROFINET)					
I/O specifications	Input signals	7 signals • Single measurement input (TRIG) • Control command input (IN0 to IN5)					
	Output signals	3 signals • Control output (BUSY) • Overall judgement output (OR) • Error output (ERROR) **Note:** The assignments of the three output signals (OUT0 to OUT2) can also be changed to the following: • READY • RUN • STG (Strobe trigger) • OR0 (Item0 judgement) to OR31 (Item31 judgement) • Exp.0 judgement to Exp.31 judgement					
	Ethernet specifications	100Base-TX/10Base-T					
	Communications	Ethernet TCP no-protocol, Ethernet UDP no-protocol, Ethernet FINS/TCP no-protocol, EtherNet/IP, PLC Link, or PROFINET					
	I/O expansion	Possible by connecting FQ-SDU1_ Sensor Data Unit. 11 inputs and 24 outputs					
	RS-232C	Possible by connecting FQ-SDU2_ Sensor Data Unit. 8 inputs and 7 outputs					
Ratings	Power supply voltage	21.6 to 26.4 VDC (including ripple)					
	Current consumption	2.4 A max.				0.3 A max.	
Environmental immunity	Ambient temperature range	Operating: 0 to 40ºC Storage: -25 to 65ºC (with no icing or condensation)					
	Ambient humidity range	Operating and storage: 35% to 85% (with no condensation)					
	Ambient atmosphere	No corrosive gas					
	Vibration resistance (destruction)	10 to 150 Hz, single amplitude: 0.35 mm, X/Y/Z directions 8 min each, 10 times					
	Shock resistance (destruction)	150 m/s^2 3 times each in 6 direction (up, down, right, left, forward, and backward)					
	Degree of protection	IEC 60529 IP67 (Except when Polarizing Filter Attachment is mounted or connector cap is removed.)				IEC 60529 IP40	
Materials		Sensor: PBT, PC, SUS Mounting Bracket: PBT Polarizing Filter Attachment: PBT, PC Ethernet connector: Oil-resistance vinyl compound I/O connector: Lead-free heat-resistant PVC				Cover: Zinc-plated steel, Thickness: 0.6 mm Case: Aluminum diecast alloy (ADC-12) Mounting base: Polycarbonate ABS	
Weight		Narrow View/Standard View:Approx.160 g Wide View:Approx.150 g				Approx. 160 g without base, Approx. 185 g with base	
Accessories included with sensor		Mounting Bracket (FQ-XL) (1) Polarizing Filter Attachment (FQ-XF1) (1) Instruction Manual, Member Registration Sheet				Mounting Base (FQ-XLC) (1) Mounting Screw (M3 × 8mm) (4) Instruction Manual, Member Registration Sheet	
LED class		Risk Group 2 (IEC62471)				---	
Applicable standards		EC Directive No.2004/108/EC and EN standard EN 61326-1					

✻1 The types of characters to be read are the same as those of FQ2-CH Optical Character Recognition Sensor.
✻2 The types of cedes to be read are the same as those of FQ-CR1 Multi Code Reader.
✻3 The types of cedes to be read are the same as those of FQ-CR2 2D Code Reader.
✻4 The maximum number of registerable scenes depends on settings due to restrictions on memory.

Touch Finder

Item	Type / Model			Model with DC power supply FQ2-D30	Model with AC/DC/battery power supply FQ2-D31
Number of connectable Sensor				Number of sensors that can be recognized (switched): 32 max. number or sensor that can displayed on monitor: 8 max.	
Main functions	Types of measurement displays			Last result display, Last NG display, trend monitor, histograms	
	Types of display images			Through, frozen, zoom-in, and zoom-out images	
	Data logging			Measurement results, measured images	
	Menu language			English, German, French, Italian, Spanish, Traditional Chinese, Simplified Chinese, Korean, Japanese	
Indications	LCD		Display device	3.5-inch TFT color LCD	
			Pixels	320 × 240	
			Display colors	16.7 million	
	Backlight		Life expectancy *1	50,000 hours at 25ºC	
			Brightness adjustment	Provided	
			Screen saver	Provided	
Operation interface	Touch screen		Method	Resistance film	
			Life expectancy *2	1,000,000 touch operations	
External interface	Ethernet			100BASE-TX/10BASE-T	
	SD card			SDHC-compliant, Class 4 or higher recommended	
Ratings	Power supply voltage			DC power connection:21.6 to 26.4 VDC (including ripple)	DC power connection: 21.6 to 26.4 VDC (including ripple) AC adapter (manufactured by Sino-American Japan Co., Ltd) connection: 100 to 240 VAC, 50/60 Hz Battery connection: FQ-BAT1 Battery (1cell, 3.7 V)
	Continuous operation on Battery *3			---	1.5 h
	Power consumption			DC power connection: 0.2 A max.	DC power connection: 0.2 A max. Charging battery: 0.4 A max.
Environmental immunity	Ambient temperature range			Operating: 0 to 50ºC Storage: –25 to 65ºC (with no icing or condensation)	Operating: 0 to 50ºC when mounted to DIN Track or panel Operation on Battery: 0 to 40ºC Storage: –25 to 65ºC (with no icing or condensation)
	Ambient humidity range			Operating and storage: 35% to 85% (with no condensation)	
	Ambient atmosphere			No corrosive gas	
	Vibration resistance (destruction)			10 to 150 Hz, single amplitude: 0.35 mm, X/Y/Z directions 8 min each, 10 times	
	Shock resistance (destruction)			150 m/s^2 3 times each in 6 direction (up, down, right, left, forward, and backward)	
	Degree of protection			IEC 60529 IP20 (when SD card cover, connector cap, or harness is attached)	
Weight				Approx. 270 g (without Battery and hand strap attached)	
Materials				Case: ABS	
Accessories included with Touch Finder				Touch Pen (FQ-XT), Instruction Manual	

✻1 This is a guideline for the time required for the brightness to diminish to half the initial brightness at room temperature and humidity. The life of the backlight is greatly affected by the ambient temperature and humidity and will be shorter at lower or higher temperatures.
✻2 This value is only a guideline. No guarantee is implied. The value will be affected by operating conditions.
✻3 This value is only a guideline. No guarantee is implied. The value will be affected by the operating environment and operating conditions.

Sensor Data Units (FQ2-S3/S4 only)

Item			Parallel Interface	RS-232C Interface
Model	NPN		FQ-SDU10	FQ-SDU20
	PNP		FQ-SDU15	FQ-SDU25
I/O specifications	Parallel I/O	Connector 1	16 outputs (D0 to D15)	6 inputs (IN0 to IN5)
		Connector 2	11 inputs (TRIG, RESET, IN0 to IN7, and DSA) 8 outputs (GATE, ACK, RUN, BUSY, OR, ERROR, STGOUT, and SHTOUT)	2 inputs (TRIG and RESET) 7 outputs (ACK, RUN, BUSY, OR, ERROR, STGOUT, and SHTOUT)
	RS-232C		---	1 channel, 115,200 bps max.
	Sensor interface		FQ2-S3 connected with FQ-WU□□□ : OMRON interface *Number of connected Sensors: 1	
Ratings	Power supply voltage		21.6 to 26.4 VDC (including ripple)	
	Insulation resistance		Between all DC external terminals and case: 0.5 MΩ min (at 250 VDC)	
	Current consumption		2.5 A max. : FQ2-S□□□□□□-□□□ and FQ-SDU□□ 0.4 A max. : FQ2-S□□-□□□ and FQ-SDU□□ 0.1 A max. : FQ-SDU□□ only	
Environmental immunity	Ambient temperature range		Operating: 0 to 50ºC, Storage: -20 to 65ºC (with no icing or condensation)	
	Ambient humidity range		Operating and storage: 35% to 85% (with no condensation)	
	Ambient atmosphere		No corrosive gas	
	Vibration resistance (destruction)		10 to 150 Hz, single amplitude: 0.35 mm, X/Y/Z directions, 8 min each, 10 times	
	Shock resistance (destruction)		150 m/s^2 3 times each in 6 directions (up, down, right, left, forward, and backward)	
	Degree of protection		IEC 60529 IP20	
Materials			Case: PC + ABS, PC	
Weight			Approx. 150 g	
Accessories included with Sensor Data Unit			Instruction Manual	

Battery

Item / Model	FQ-BAT1
Battery type	Secondary lithium ion battery
Nominal capacity	1,800 mAh
Rated voltage	3.7 V
Ambient temperature range	Operating: 0 to 40°C Storage: –25 to 65°C (with no icing or condensation)
Ambient humidity range	Operating and storage: 35% to 85% (with no condensation)
Charging method	Charged in Touch Finder (FQ2-D31). AC adapter (FQ-AC□) is required.
Charging time *1	2 h
Usage time *1	1.5 h
Battery backup life (See note 2.)	300 charging cycles
Weight	50 g max.

✻1 This value is only a guideline. No guarantee is implied. The value will be affected by operating conditions
✻2 This is a guideline for the time required for the capacity of the Battery to be reduced to 60% of the initial capacity. No guarantee is implied. The value will be affected by the operating environment and operating conditions.

System Requirements for TouchFinder for PC

The following Personal Computer system is required to use the software.

OS	Microsoft Windows XP Home Edition/Professional SP2 or higher (32-bit version) Microsoft Windows 7 Home Premium or higher (32-bit/64-bit version)
CPU	Core 2 Duo 1.06 GHz or the equivalent or higher
RAM	1GB min.
HDD	500 MB min. available space *
Monitor	1,024 × 768 dots min.

✻ Available space is also required separately for data logging.

Safety Precautions

⚠ WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly.
Do not use it for such purposes.

- **For details, including precautions for correct use, refer to the "Smart Camera FQ2-S/CH Series User's Manual" (Cat. No. Z337) on your OMRON website.**
- **For technical information and product FAQs, refer to the "Technical Guide" at your OMRON website.**

Dimensions

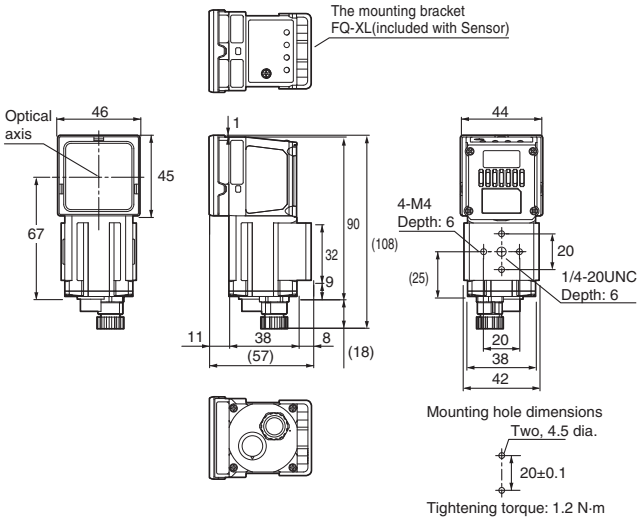
(Unit: mm)

Sensor

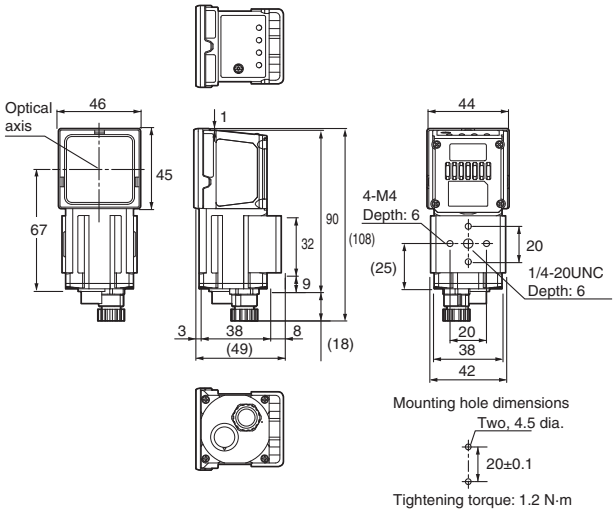
Integrated Sensor

Narrow View
FQ2-S□□□10F-□□□

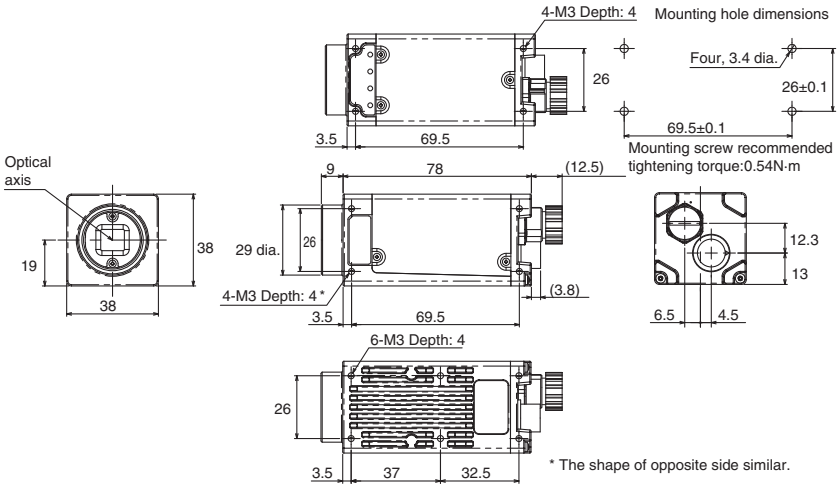
Standard View
FQ2-S□□□50F-□□□



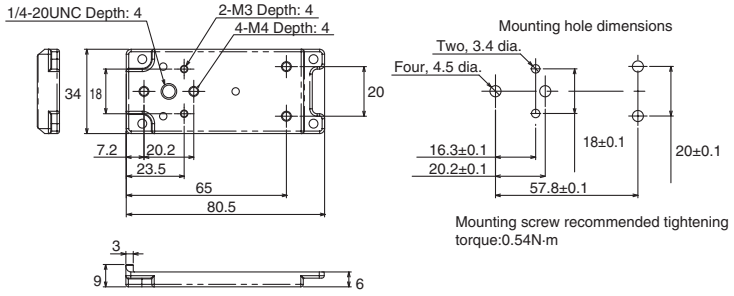
Wide View
FQ2-S□□100□-□□□



C-mount
FQ2-S3□-13□
FQ2-S4□-13□



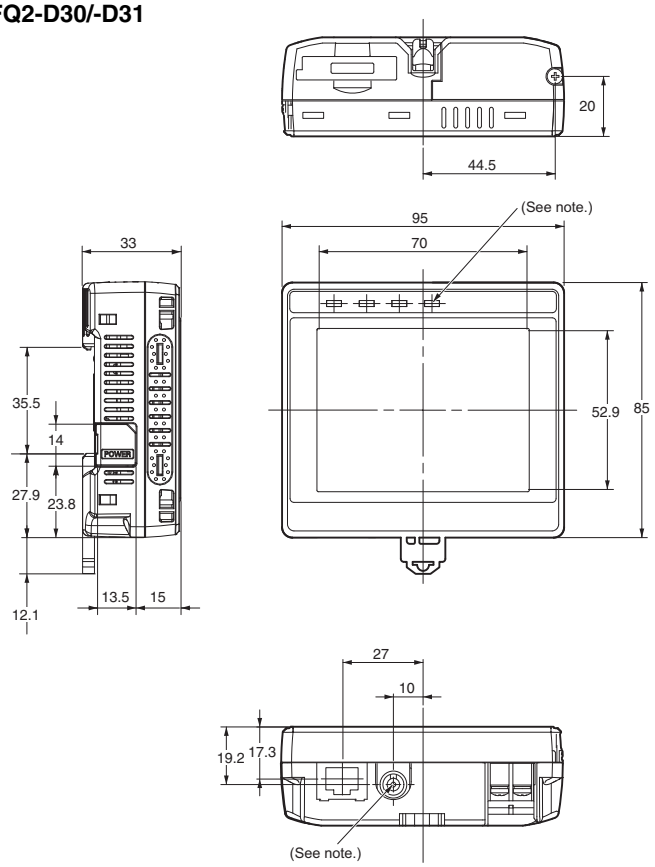
Mounting Base FQ-XLC (included with Sensor)



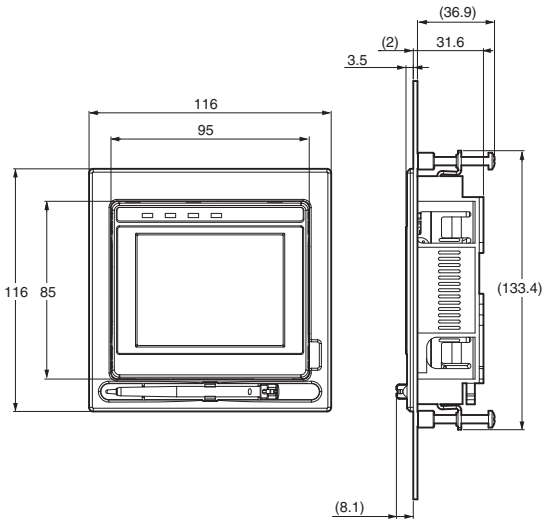
(Unit: mm)

Touch Finder

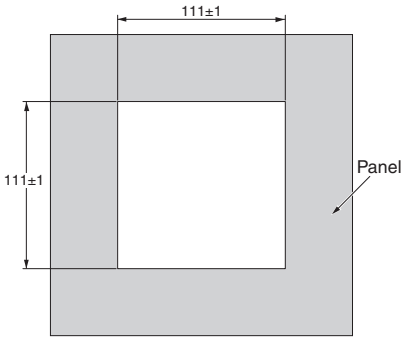
FQ2-D30/-D31



Panel Mounting Adapter FQ-XPM



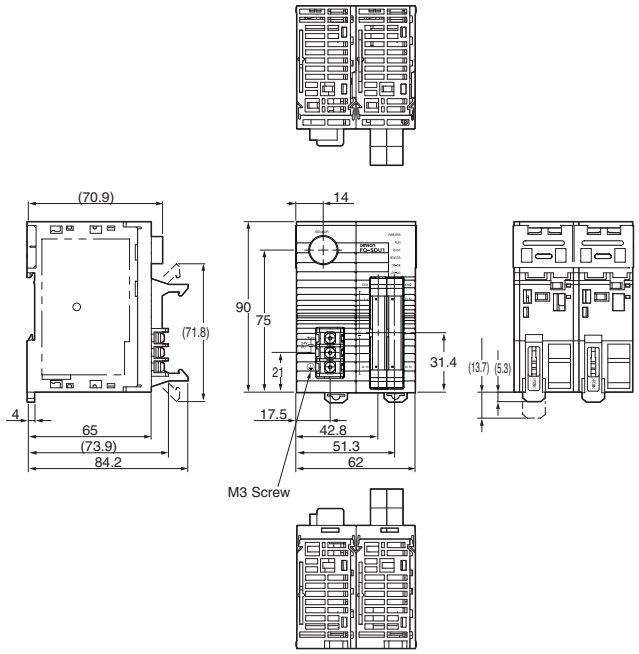
Panel Cutout Dimensions



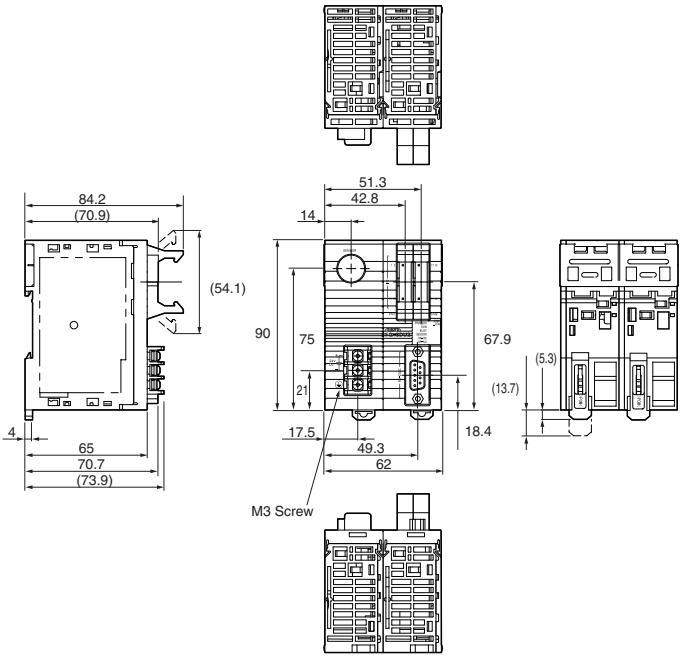
Note: Provided with FQ2-D31 only.

Sensor Data Unit

FQ-SDU10/-SDU15

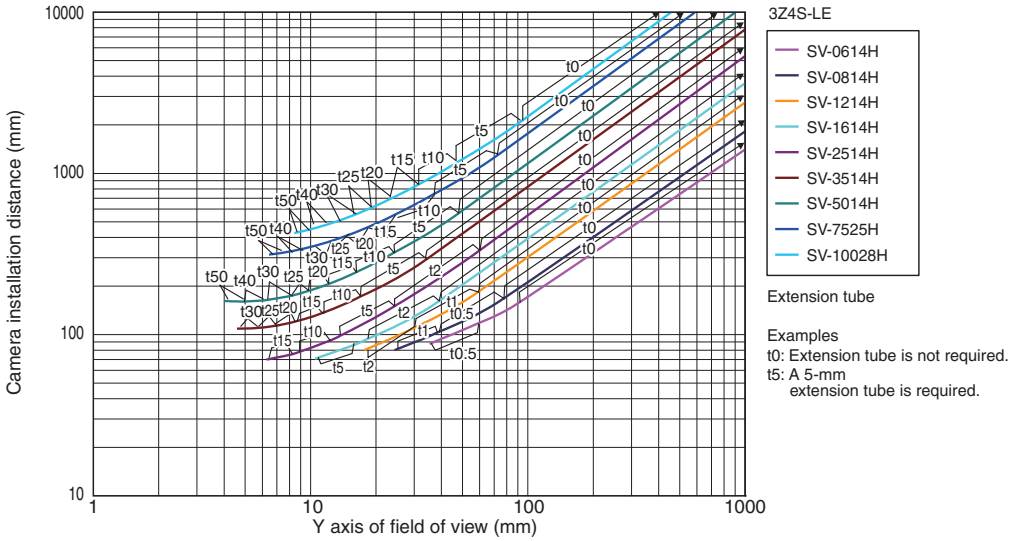


FQ-SDU20/-SDU25



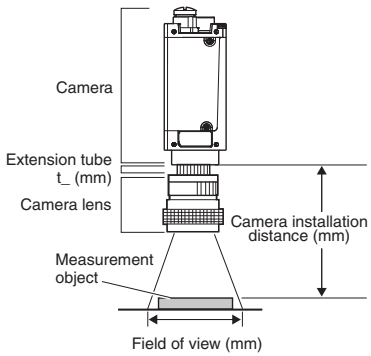
Optical Chart for C-mount Camera FQ2-S3□-13□/-S4□-13□

High-resolution, Low-distortion Lenses 3Z4S-LE SV-□□□□H



Meaning of Optical Chart
The X axis of the optical chart shows the field of view (mm) (See Note.), and the Y axis of the optical chart shows the camera installation distance (mm).

Note: The lengths of the fields of vision given in the optical charts are the lengths of the Y axis.



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