

FC34E (Explosion-proof), FC34U (Outdoor) Fixed Type CCTV Camera Analog Type

GS 85A7C01-17EN

■ GENERAL

FC34 fixed type CCTV camera is compatible with a wide variety of applications, such as monitoring under sever environmental conditions and diagnosis of facilities.

Stainless chassis with electrolytic polishing is well suited for good corrosion-resistance, and is compact and lightweight.

Heater and defroster is standard equipment that can be used for a wide range of temperature.

Wiper and hood can be selected as option.

RS-485 type can connect to a Web camera server as a controller which can use digital functions of video management system(s).



■ STANDARD SPECIFICATIONS

● Camera

Camera type:	Color
Image Sensor:	1/4" interline transfer CCD
Signal:	NTSC, PAL
Effective Pixels:	NTSC: 976 (H) 494 (V) PAL: 976 (H) 582 (V)
Horizontal resolution:	650TV line
Synchronous system:	Internal synchronization
Video S/N:	50 dB
White Balance:	ATW
Electronic shutter (Auto/Manual):	1/10,000 - 1/60 sec
Minimum illuminance of subject (shutter speed NTSC: 1/60sec, PAL: 1/50sec):	Normal sensitivity (Sense Up: OFF): 0.5 lx Color typical 0.04 lx Color typical High sensitivity (Sense Up: ON): 0.03lx Color typical 0.0025lx B/W typical 0.015lx Color AGC High 0.00125lx B/W AGC High
Zoom Magnification:	(36x optical) x (20x digital)
Lens:	3.3 mm -119 mm / F1.4 - 4.2 (With auto focus)
Horizontal field of vision:	Approx. 60.2° (wide-angle) - Approx. 1.7° (telephoto)
Iris (Auto / Manual):	0: close - 255: open (Manual)

● Input/output

Common to all models

Video output:	VBS 1.0 V p-p 75Ω
Video transmission distance:	Max.300m (when 5C-2V cable is used) Distance can be extended using a cable compensator (up to 1,200m) or an optical converter.

Multiplex signal control model

Control signal input:
Multiplexed video and control signals (both signals into a single coaxial cable)
Control signal transmission distance: Up to. 1,200m * *Note*

* *Note: If the cable line will be exposed to intense noises, using a video transcoder is recommended.*

RS-485 control model

Control signal input:
Asynchronous full duplex mode communication of 8-bit data, 1-stop bit, at 9,600 bps via RS-485 interface

● Main Body

Material (case): Stainless steel SS316L
Finish: Electrolytic polishing
Weight: 10kg or less

● Recommended connection cables

NOTE
Any cabling work should be done at the customer's side

Power cable:

3-conductor 1.25mm (2 outer diameter Ø10.0mm; JIS C3312 or outer diameter 7.8mm: JIS C3306)

Video cable:

75Ω Coaxial **Note* (5C-2V or 7C-2V)
* *Note: If the cable line will be exposed to intense noises, using a video transcoder is recommended.*

Control cable:

0.5mm 2-pair twisted pair shielded cable (Outer diameter Ø8.0mm) for RS-485

● Power Supply

Rated supply voltage	100-240V AC, 0.3A
Allowable voltage Range	90V AC to 264V AC
Rated supply frequency	50/60Hz
Maximum power consumption	Approx.60VA

● **Installation Environment**


Operating temperature: -40°C to +60°C (-40°F to 140°F) / 20 to 95 %RH (non-condensation)
 Install location: Maximum altitude of 2000m
 Installation type: Upright / Inverted (Selectable)
 Class of ship: DNV (Under examination)
 Ingress protection: IEC IP66 equivalent (waterproof)

● **Regulatory Standards:** (Equipment: FC34E CCTV Cameras)

IECEX Certificate(Only when Cable Entries code is 1)
 Certificate No.: IECEx CML 18.0165X
 Type of Protection: **Flameproof "db"**
 Marking: Ex db IIC T5 Gb
 Ta=-40°C to +60°C
 Standards: IEC60079-0:2017 , IEC60079-1:2014-06

ATEX Certificate(Only when Cable Entries code is 1)

Examination Certificate: CML 14ATEX1052X
 Directive: 2014/34/EU
 Explosion protection: Flameproof
 Marking:

 II 2 G
 Ex db IIC T5 Gb
 Ta= -40°C to +60°C

Standards: EN IEC 60079-0:2018, EN 60079-1:2014

Compatible standards:  (Only FC34U, or when FC34E Cable Entries code is 1)

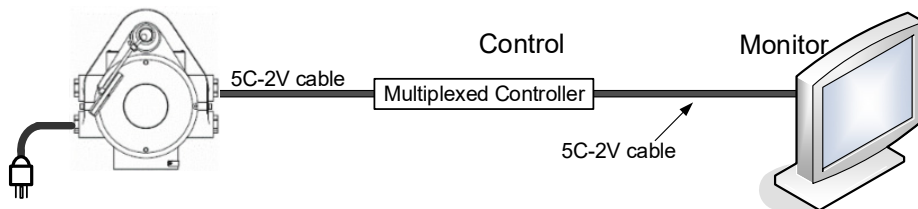
Directives	Standards
2014/30/EU (EMC)	EN 61326-1:2013 Class A Table2 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements EN 55011:2016+A1:2017+A11:2020 Class A Group1 Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement EN 61000-3-2:2014, EN IEC 61000-3-2:2019 Electromagnetic compatibility (EMC) – Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤16 A per phase) EN 61000-3-3:2013, EN 61000-3-3:2013+A1:2019 Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
2014/35/EU (LVD)	EN 61010-1:2010+ A1:2019 (Indoor/Outdoor use, Pollution degree II, Overvoltage Category I) Safety requirements for electrical equipment for measurement, control, and laboratory use – Part1: General requirements
2011/65/EU (RoHS)	EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
2014/34/EU (ATEX)	EN IEC 60079-0:2018 Explosive atmospheres - Part 0: Equipment - General requirements EN 60079-1:2014 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" The marking of the equipment or protective system:  II 2 G Ex db IIC T5 Gb
<i>NOTE: This Directive is FC34E only</i>	
The number of the EU-Type Examination Certificate is issued by: The Name of the Notified Body: CML B.V. The Identification Number of the Notified Body: 2776 The Address of the Notified Body: Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands The Number of the EU-Type Examination Certificate: CML 14ATEX1052X	
Quality Assurance Notification is issued by: The Name of the Notified Body: DEKRA Certification B.V. The Identification Number of the Notified Body: 0344 The Address of the Notified Body: Meander 1051 6825 MJ Arnhem, The Netherlands The Number of Quality Assurance Notification: DEKRA 11ATEXQ0127	

■ SYSTEM CONFIGURATION FOR EACH TYPE OF CONTROL

(1) Multiplex signal control model

Connection with two coaxial cables between a specific multiplexed controller and surveillance camera (FC34□). The FC34 can be controlled and operated remotely by the multiplexed controller in the monitoring room (in **Japan only**).

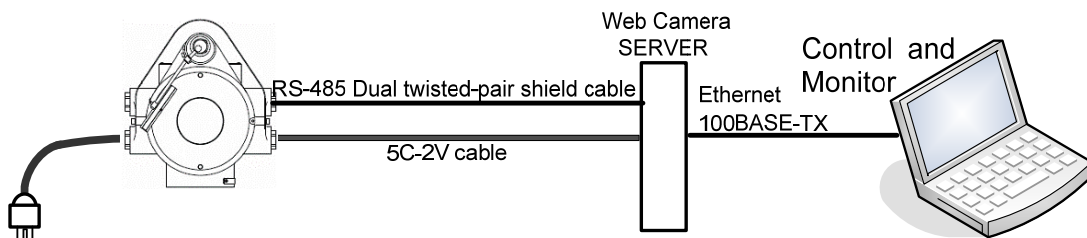
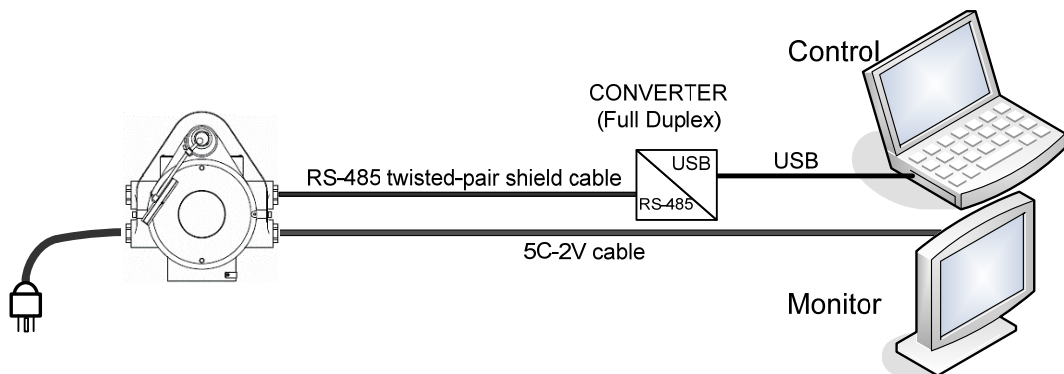
FC34□- N□N□□



(2) RS-485 control model

Video signal connects with single coaxial cable. Control signal connects with RS-485 cable. By using a protocol converter (RS-485/USB), it makes possible to control the camera via USB port of the computer. Or via the Web camera server, both monitor and control of the camera becomes available on the browser of the personal computer.

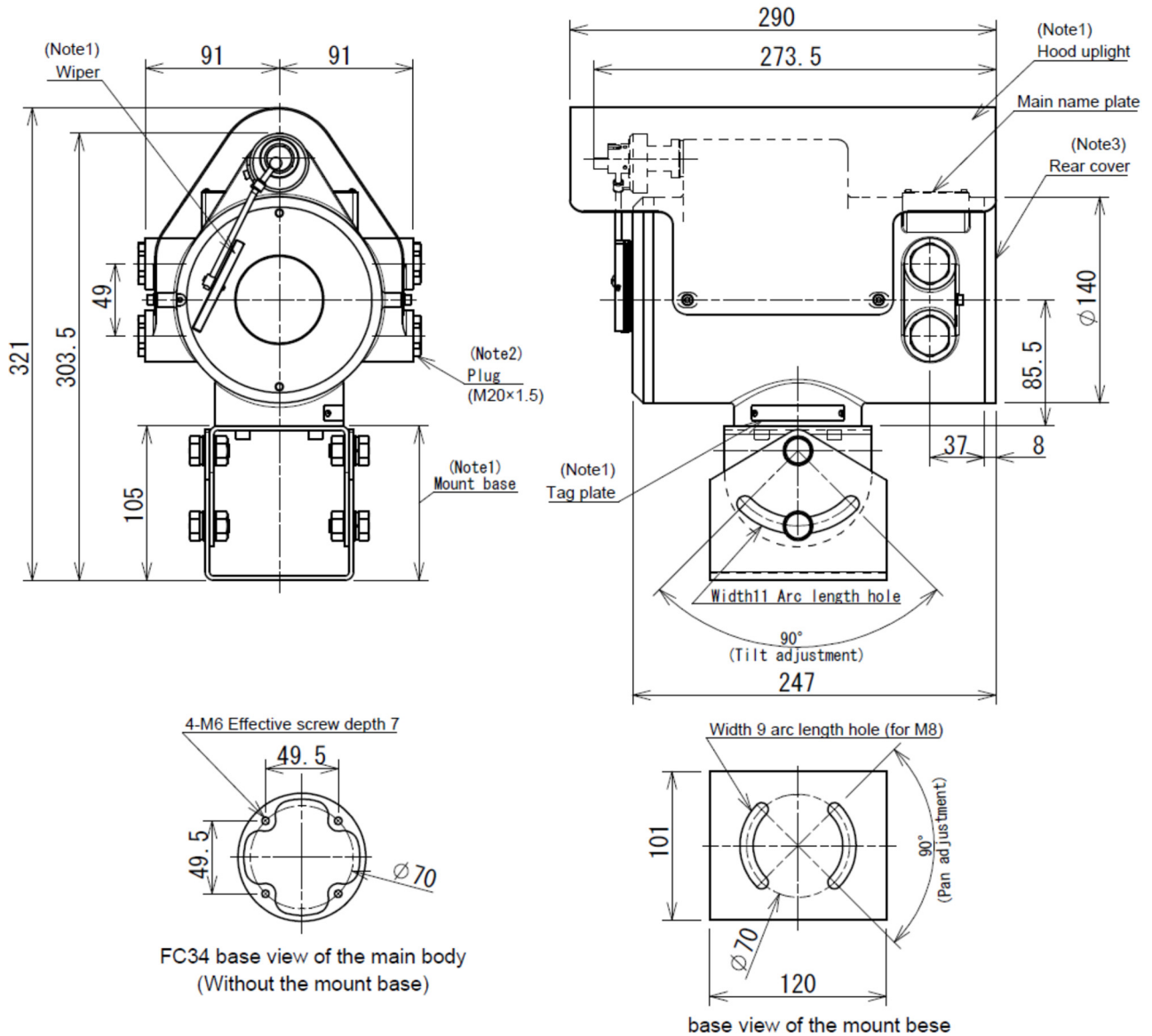
FC34□- □□S□□



EXTERNAL DIMENSIONS

Main body of model FC34

Upright Type FC34□-□□□□S

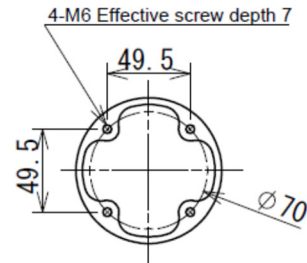
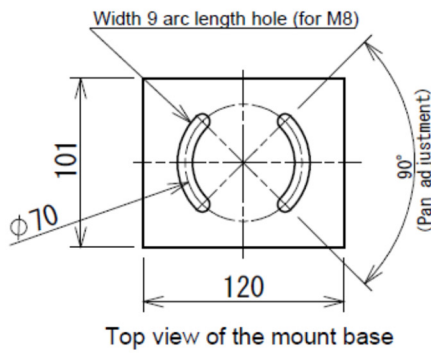


- Note 1: Attached to the product at the time of shipment when specified using the option specification codes.
(A hood and a mount base are included. Please attach them to the main body using the included screws when installed.)
- Note 2: A plug is attached to the cable output port for prevention of water leakage into the main body.
Please remove the plug when cables are connected.
- Note 3: Please remove the cover when cables are connected.

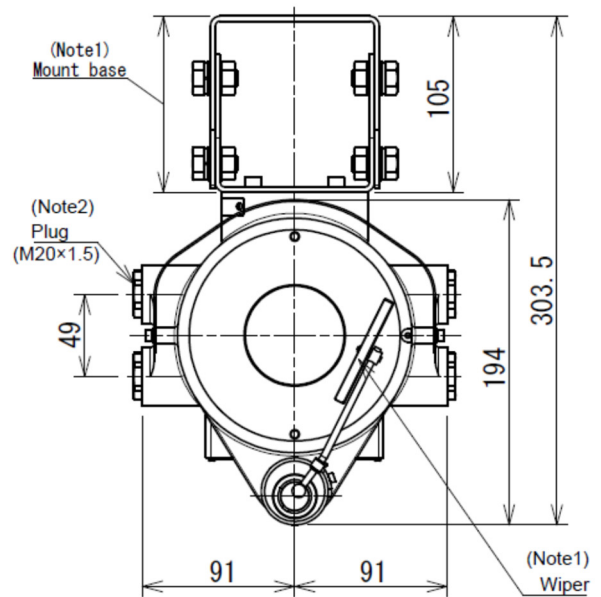
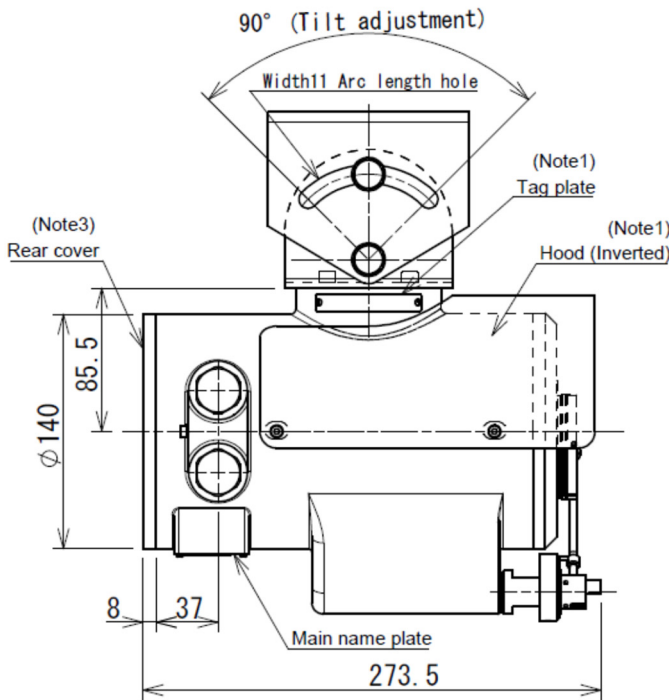
■ EXTERNAL DIMENSIONS

● Main body of model FC34

Inverted Type
FC34□-□□□□U



FC34 Main body Top View
(Without the mount base)



Note: Care must be taken because installation may result in a skewed image

- Note 1: Attached to the product at the time of shipment when specified using the option specification codes.
(A hood and a mount base are included. Please attach them to the main body using the included screws when installed.)
- Note 2: A plug is attached to the cable output port for prevention of water leakage into the main body. Please remove the plug when cables are connected.
- Note 3: Please remove the cover when cables are connected.

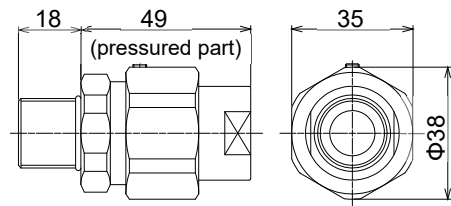
■ CABLE GLANDS

● Water-proof gland with union

UG2 (cabling port G1/2 cable gland 2)
 UG3 (cabling port G1/2 cable gland 3)

UM2 (cabling port M20x1.5 cable gland 2)
 UM3 (cabling port M20x1.5 cable gland 3)

Weight: approx. 230 g

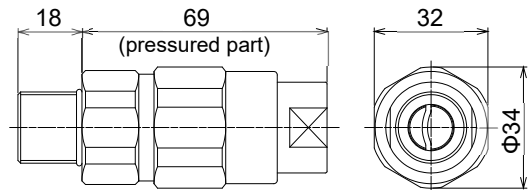


● Pressure-resistant packing metal rig

EG2 (cabling port G1/2 cable gland 2)
 EG3 (cabling port G1/2 cable gland 3)

(Note1) This CABLE GLAND is Japanese standard

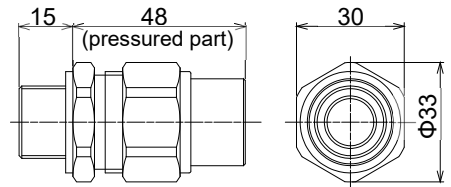
Weight: approx. 250 g



● Pressure-resistant packing metal rig

EM2 (connection home M20x1.5 cable gland 2)
 EM3 (connection home M20x1.5 cable gland 3)

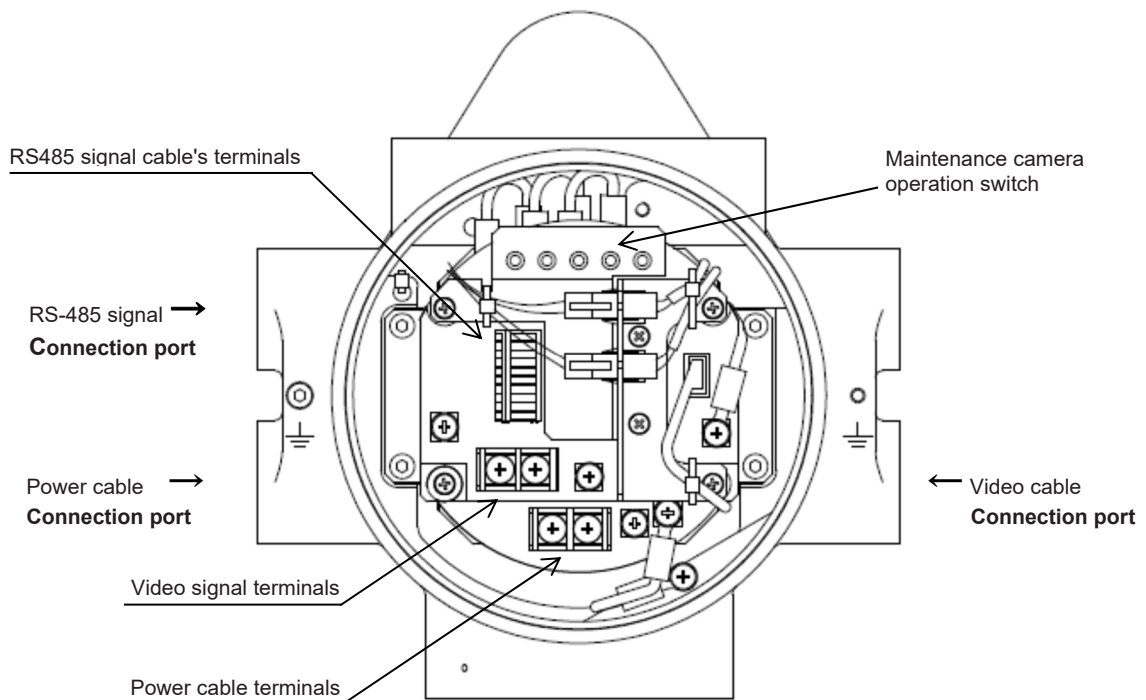
Weight: approx. 140 g



Note: Each shape of the packing metal rig may be changed.

■ CABLING (MAIN BODY)

● Recommended connection port assignment (internal connections: when a rear cover has been removed)



■ MODEL AND SUFFIX CODES

Model	Suffix Code	Description
FC34E		Explosion-proof Fixed type CCTV Camera
FC34U		Outdoor Fixed type CCTV Camera
Camera type	-N	High-sensitivity, 1/4-inch, 976 (H) x 494 (V) pixels 36 times optical zoom NTSC.
	-P	High-sensitivity, 1/4-inch, 976 (H) x 582(V) pixels 36 times optical zoom. PAL
Wiper	W	With wiper
	N	Without wiper
Control	N	Multiplexed signal (for Japan only)
	S	RS-485
Cable Entries	0	G (PF) female thread (for Japan explosion protection)
	1	M female thread (for ATEX / IECEx explosion protection overseas)
Installation	S	Upright
	U	Inverted
Cable gland	EG2	Explosion-proof packing adapter 2 pieces and Sealing plugs of 2. (Female thread G1/2 , for an explosion protection in Japan)
	EG3	Explosion-proof packing adapter 3 pieces and Sealing plug of 1. (Female thread G1/2 , for an explosion protection in Japan)
	EM2	Explosion-proof packing adapter 2 pieces and Sealing plugs of 2. (Female thread M20X1.5 , for ATEX explosion protection overseas)
	EM3	Explosion-proof packing adapter 3 pieces and Sealing plug of 1. (Female thread M20X1.5 , for ATEX explosion protection overseas)
	UG2	Water-proof gland with union 2 pieces, female thread G1/2 (for Japan)
	UG3	Water-proof gland with union 3 pieces, female thread G1/2 (for Japan)
	UM2	Water-proof gland with union 2 pieces, female thread M20X1.5 (for overseas)
	UM3	Water-proof gland with union 3 pieces, female thread M20X1.5 (for overseas)
	NNN	No Cable Glands, No Sealing plugs

(Note1) The designation of "Cable Entries" for FC34U is 1. (0 is only for Japan)

(Note2) Heater (for camera protection), defroster (anti-fog function), and simple surge arrester (AC power line input) are being equipped internally.

(Note3) The product does not include connection cables. Please prepare it at the user side.

● OPTION SPECIFICATIONS

Additional arrangement items set forth below are requiring an optional specification at the time of ordering otherwise those are not attached to the product.

Item	Option code	Description
Mount base	/A	Mount base to attach the main body (Note4)
Name tag plate	/T	Installation of a stainless steel (Note5)
With Hood	/SH	Hood (Upright)
	/UH	Hood (Inverted)
Tool	/CT	Tool (for rear cover maintenance) (Note6)

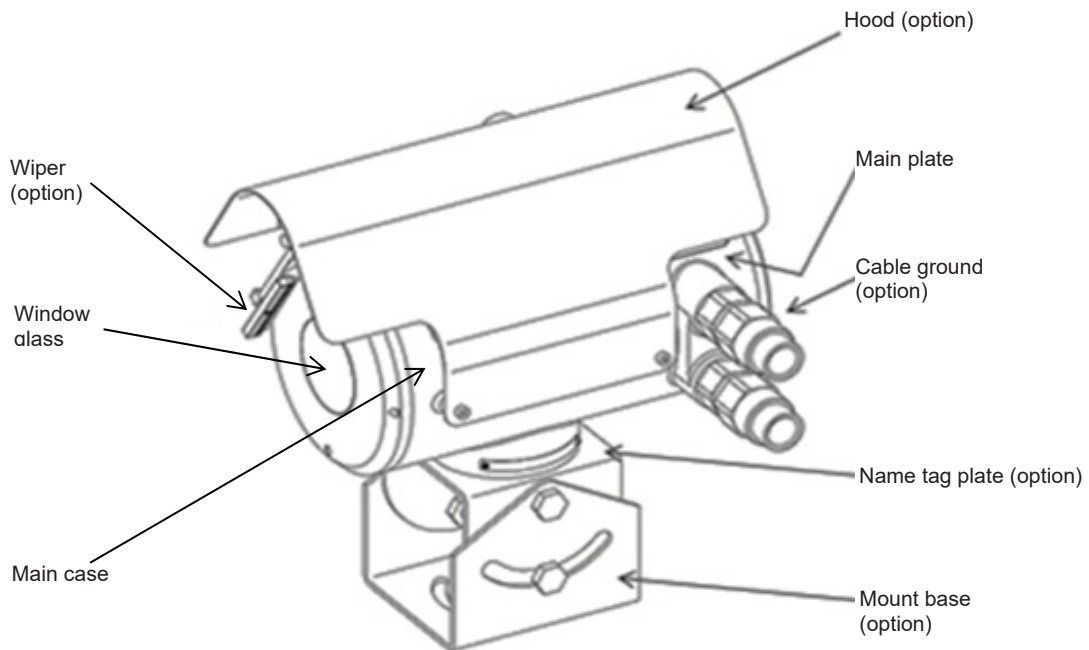
(Note4) If option code /A was omitted at the time of ordering, "Mount base" will not attach to the product.

(Note5) Up to 15 letters (alpha-numeral combination code) can be specified on the "Name tag plate" at the time of ordering.

(Note6) If option code /CT was omitted at the time of ordering, "Tool" will not attach to the product.

■ Item specified at the time of the order

1. Model and Suffix code
2. Tag name (Up to 15 letters), If “Name tag plate” (/T) option is specified.



NOTES): This product is manufactured by Mikami Corporation and sold by Yokogawa Electric Corporation.

NOTES): This specification sheet will be subject to change without prior notice.

NOTES): All product or company's names described in this document are trademarks or registered trademarks of each respective company.