

General Specifications

FC33E (Explosion-proof),
FC33U (Outdoor)
Pan Tilt Zoom type CCTV Camera



GS 85A7C01-16EN

■ GENERAL

► Model FC33:

- FC33 Series explosion-proof or outdoor pan tilt zoom type Color Camera is a self-contained, compact and lightweight.
- Most suitable for installation in high place and/or confined spaces.
- Designed to continuously operating in the most adverse environments of offshore and onshore oil & gas industries, marine and heavy industrial sectors
- High-sensitivity that permits whole day continuous monitoring without special lighting. (Day/Night camera)



► Analogue type:

- Two control models available: RS-485 (PC-friendly) or Multiplexed signal on coaxial (Japan only)
- Camera image comes in CCD (NTSC or PAL)
NTSC: 976 (H) x 494 (V) or PAL: 976(H) x 582 (V).

► Options:

- Hood/Shade
- Integrated Wiper
- Upright/Inverted Installation

■ MODEL AND SUFFIX CODES



Model	Suffix Code	Option Code	Description
FC33E			Explosion-proof pan-tilt zoom color camera
FC33U			Weather-proof pan-tilt zoom color camera
Camera type	-N		Analog High-sensitivity, 1/4" CCD, 976(H)x494(V)pixels, 36x optical zoom, NTSC
	-P		
Wiper	W		With wiper
	N		Without wiper
Control type	N		Multiplexed signal in the video (Analog type and Japanese only)
	S		RS-485 (Analog type only)
Cable Entries (Explosion-proof Certification) *1	0		Explosion-protection in Japan only, (G1/2 female thread, Cable glands on the Base Box)
	1		ATEX/IECEx Certification (M20 female thread, Cable glands on the Base Box)
	2		CSA Certification, (M20 female thread, Cable glands on the Base Box) *2
Installation	S		Upright
	U		Inverted
Additional Specification code	/T		Name tag plate: Up to 15 letters (alpha-numeral combination code) can be specified
	/SH		Hood (Upright) for Analog type
	/UH		Hood (Inverted) for Analog type
	/SD		Shade(Only Upright Installation)
	/L10		Cable length 10m (2 cables lengths set 10m from 5m of std. length)
	/ADP		Mounting adapter plate for the previous FC13

*1 For the cable entry code of FC33U (Outdoor), specify 0 for Japan and 1 for overseas.

*2 From October 2022 onwards, CSA explosion-proof certified products cannot be ordered.

STANDARD SPECIFICATIONS

Analog type:

	Item	Description
Video	Image Sensor	1/4" CCD interline transfer (Color)
	Effective Pixels	NTSC: 976 (H) 494 (V) PAL: 976 (H) 582 (V)
	Horizontal resolution:	650TV line
	Video S/N	> 50 dB
	White Balance	ATW (auto tracing white balance)
	Zoom Magnification	(36x optical) x (20x digital)
	Lens	f: 3.3 mm - 119mm / F1.4 - 4.2 (with auto focus)
	Angle of View	60.2° (wide-angle) to 1.7° (telephoto)
	Iris (Auto/Manual):	0: close - 255: open (Manual)
	Electronic shutter (Auto/Manual):	1/10,000 sec to 1/60 sec
	Minimum illumination	Normal Sensitivity (Sense Up: OFF)
High Sensitivity (Sense Up: ON)		0.03 lx Color typical 0.0025 lx B/W typical 0.015 lx Color (AGC High) 0.00125 lx B/W (AGC High)
Shutter speed: -NTSC:1/60 sec -PAL:1/50 sec		
I/O	Video output signal:	VBS 1.0 V p-p 75Ω signal Transmission distance: Up to 300m (when 5C-2V cable is used, without a cable compensator)
	Control type S (RS-485 signal)	Asynchronous communication, full duplex mode: (8-bit data, 1-bit stop, at 9,600 bps, no- parity)
	Communications over RS-485 signal	Fieldeye command, D-protocol command
Main Body	Housing Material	Die Casted SS316L (Stainless steel) no welding parts
	Finish	Electrolytic Polishing
	Weight	20 kg (Cables are excepted)
Cable Entries	Cable (2-port)	- For Composite-cable input (RS485-cable and coaxial-cable lines are combined within one-cable. Std. length: 5m) - For Power-cable input (Std. length: 5m)
Mechanical	Pan Operation	360° continuous and endless
	Tilt Operation	180° (0±90°)
	Rotation Speed	Up to Pan-tilt 40°/sec
	Installation style	Upright /Inverted
Electrical	Rated Power Supply	100VAC to 240VAC, 50Hz or 60Hz, 0.6A
	Maximum Power Consumption	Approx. 60VA
Environment	Operation Temperature /Humidity	-40°C to +60°C (-40°F to +140°F) / 20 to 95% RH
	Storage Temperature/Humidity	-40°C to +60°C / 5% to 95% RH (Non-codensation) (at 40°C)
	Installation location	Maximum altitude of 2000 m
Others	Preset points	128 points , Preset Accuracy: ±0.5° (PAN/ TILT)
	Defroster	Standard equipment
	Wiper	Option
Certifications	ATEX Flameproof "db" Dust-ignition "tb" ^{*1}	CML 14ATEX1097X (EN IEC 60079-0:2018, EN60079-1:2014, EN60079-31:2014)  II 2 GD Ex db IIC T5 Gb Ex tb IIIC T100°C Db
	IECEX Flameproof "db" Dust-ignition "tb" ^{*1}	IECEX CML 16.0096X (IEC 60079-0:2017, IEC 60079-1:2014-06, IEC 60079-31:2013) Ex db IIC T5 Gb Ex tb IIIC T100°C Db
	Degree of protection of enclosure:	IP 66
		2014/30/EU (EMC) EN 61326-1:2013 Class A Table2 EN 55011:2016+A1:2017+A11:2020 Class A Group 1 EN 61000-3-2: 2014, EN IEC 61000-3-2: 2019 EN 61000-3-3: 2013, EN 61000-3-3:2013+A1:2019 2014/35/EU (LVD) EN61010-1:2010+ A1:2019 Indoor/Outdoor use, Pollution degree II, Overvoltage Category I 2011/65/EU (RoHS) EN IEC 63000:2018

Note : This product is designed only for large industrial equipment.

*1 Only when Cable Entries code is 1.

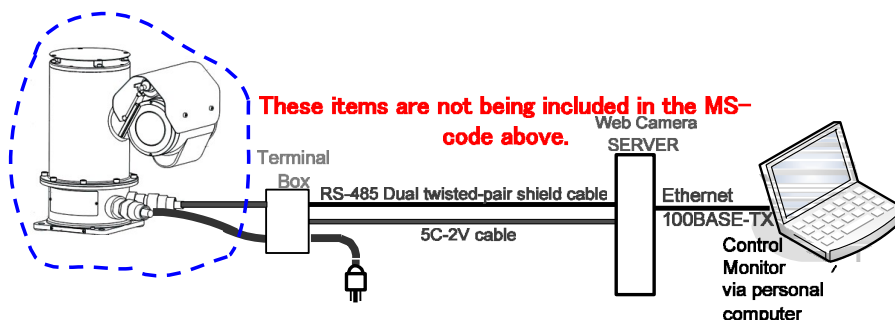
*2 Only for FC33U, or when FC33E Cable Entries code is 1.

■ BODY CONNECTION CABLES

Analog type:

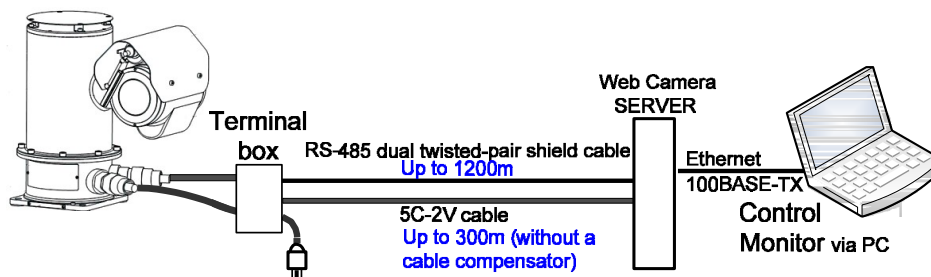
Cable type		Device to be Connected (via the Terminal box)	
		Symbol / Type	(Connected to:)
Power cable (Default length 5m, non-removable from the body) (AWG16 equivalent)	Brown	L	100 to 240 V AC
	Pale blue	N	(AC power line)
	Green yellow	GND	(AC power ground)
Video signal cable	Internal conductor	Video signal	Web camera server (VIDEO IN) → EXAMPLE (1) or Monitor display (for PAL and/or NTSC) (VIDEO IN) → EXAMPLE (2)
	External inductor	Signal/GND	
RS-485 cable (AWG24 equivalent)	Yellow	twisted pair	TXD+
	White	cable	TXD-
	Orange	twisted pair	RXD+
	White	cable	RXD-
	Shield		FG (as needed)
			Web camera server (RS-485 terminals) → EXAMPLE (1) or Full-duplex converter and so on. (RS-485 terminals) → EXAMPLE (2)

FC33E-PWS1S/SH/SD

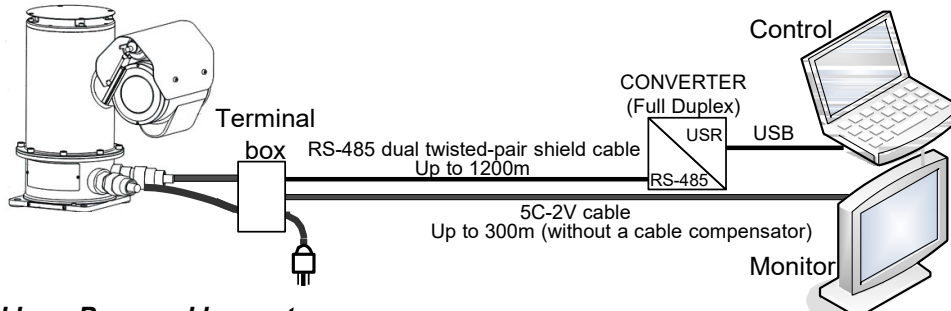


■ EXTERNAL CONNECTIONS (EXAMPLE)

(1) Connection to a Web Camera serve:



(2) Direct Connection to a PC

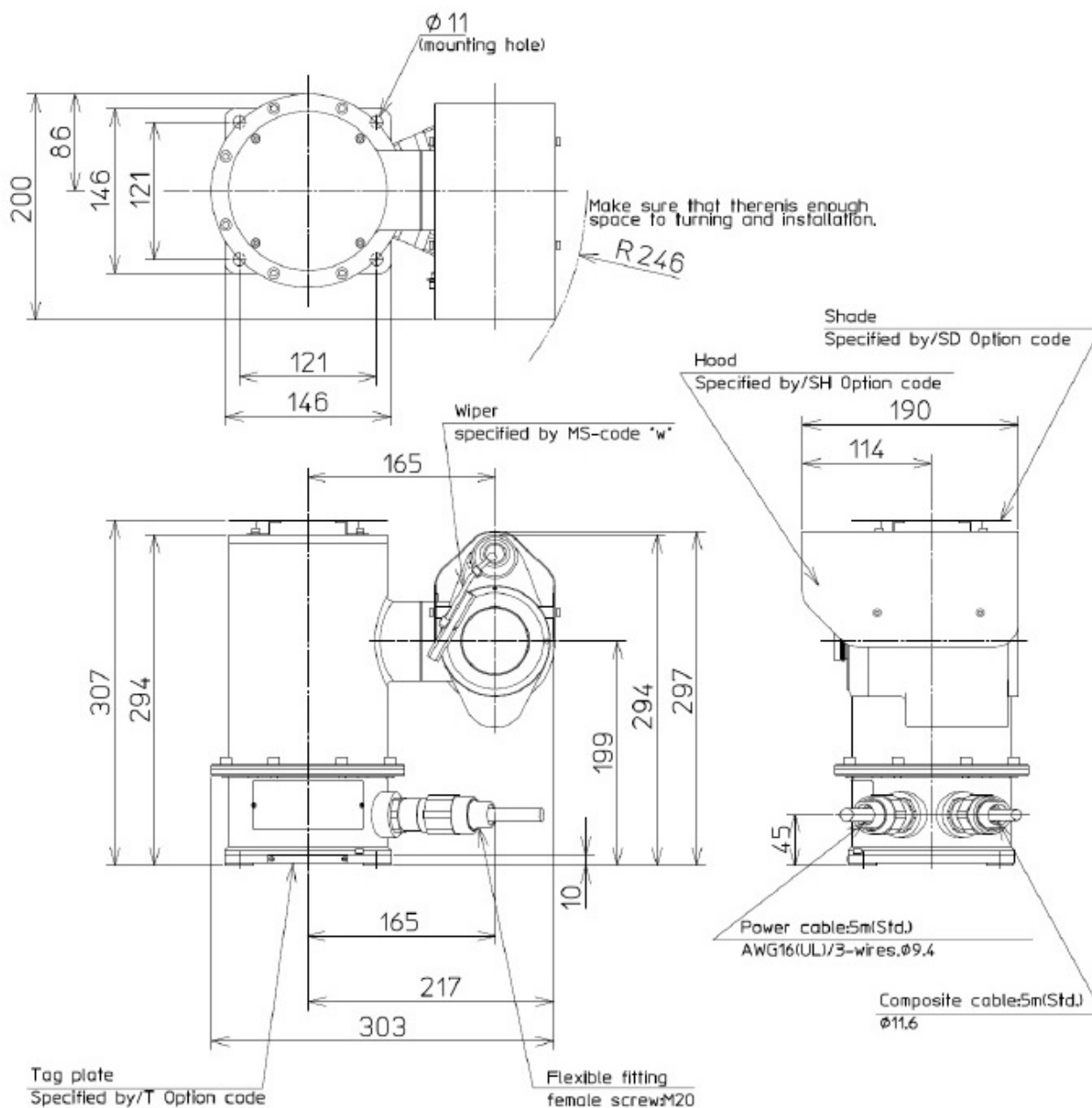


NOTE): Terminal box: Prepared by customer.

External dimensions of the Analog Type

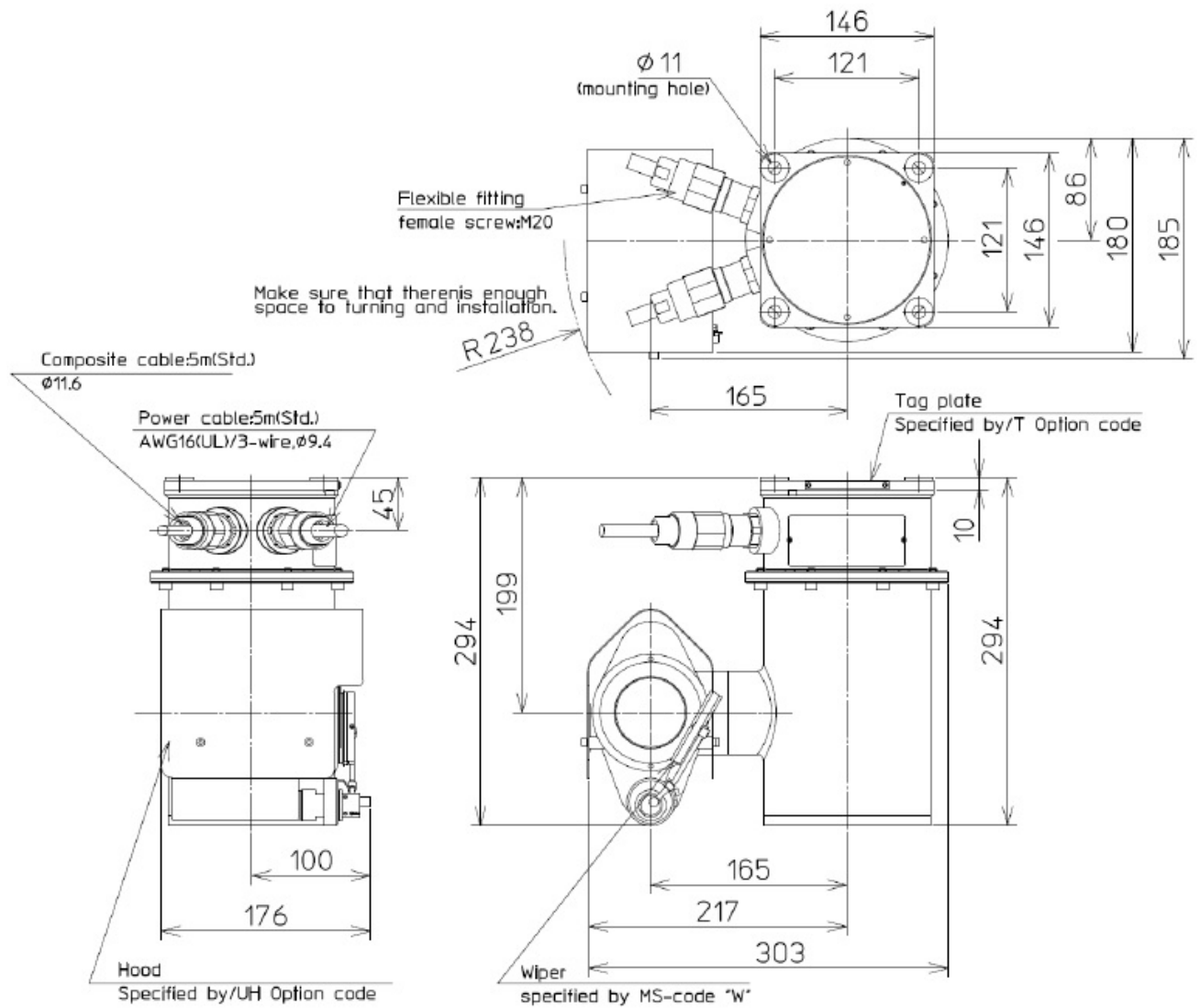
• Analog /Upright Type: FC33□-P(N)□□□S

Unit: mm

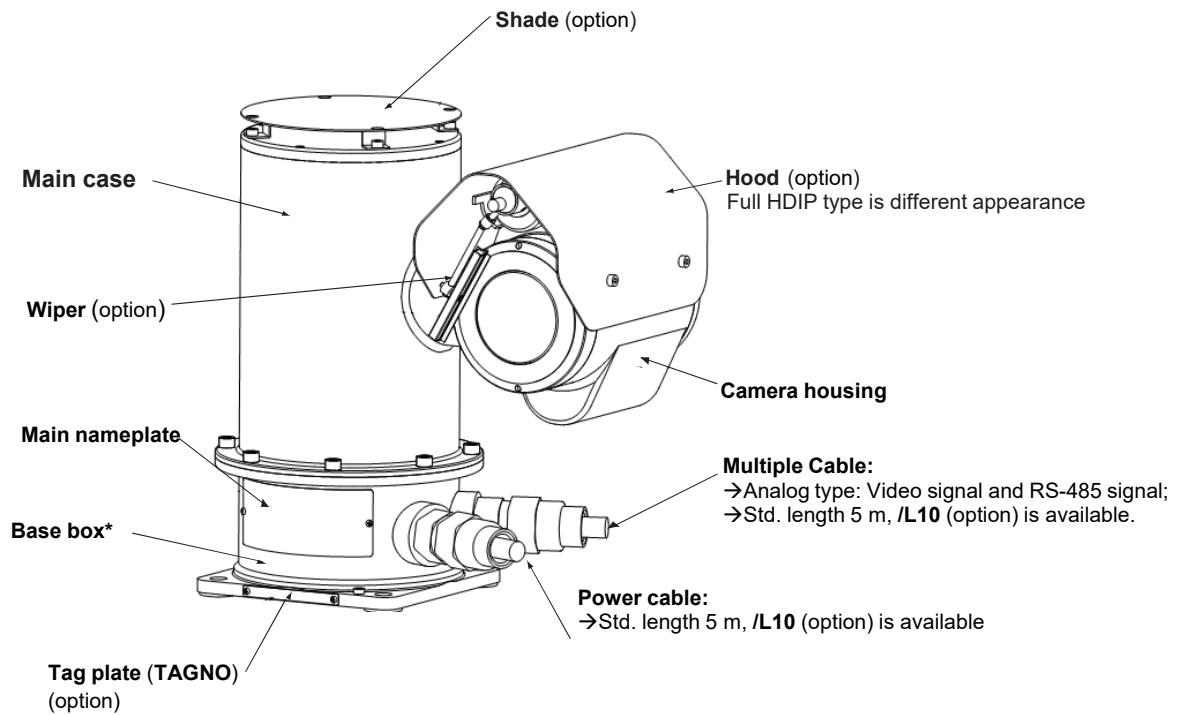


• Analog /Inverted Type:
FC33□-P(N)□□□U

Unit: mm



■ Designating option codes for making your order



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.

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