

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 CCTV 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)

► Full HDIP type:

- Camera image comes in CMOS Full HD: 1080 pixels, 60(fps)
- IP (Internet Protocol)

► Analog 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

► External Option:

- JB (Junction Box) for Full HD IP type



■ MODEL AND SUFFIX CODES

For common use TABLE of both the Full HD IP and Analog type

Model	Suffix Code	Option Code	Description	
FC33E			Explosion-proof Pan Tilt Zoom CCTV Camera	
FC33U			Outdoor Pan Tilt Zoom CCTV Camera	
Camera type	-D		Full HD	High-sensitivity, 1/2.8" CMOS, 1920x1080 pixels , 30x optical zoom
	-N		Analog	High-sensitivity, 1/4" CCD,976(H)x494(V)pixels,36x optical zoom, NTSC
	-P			High sensitivity, 1/4" CCD,976(H)x582(V)pixels,36x optical zoom, PAL
Wiper	W		With wiper	
	N		Without wiper	
Control type	E		10BASE-T,100BASE-TX, (Full HD IP type)	
	N		Multiplexed signal in the video (Analog type and Japanese only)	
	S		RS-485 (Analog type only)	
Certification (Cable Entries)	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)	
Installation	S		Upright	
	U		Inverted	
Option	/T		Name tag plate: Up to 15 letters (alpha-numeral combination code)can be specified	
	/SHD		Hood (Upright) for Full HDIP type	
	/UHD		Hood (Inverted) for Full HDIP type	
	/SH		Hood (Upright) for Analog type	
	/UH		Hood (Inverted) for Analog type	
	/SD		Shade (Only Upright Installation: S)	
	/L10		Cable length 10m (Standard Cables length:5m)	
	/ADP		Mounting adapter plate for the previous FC13	

■ STANDARD SPECIFICATIONS

Full HDIP type:

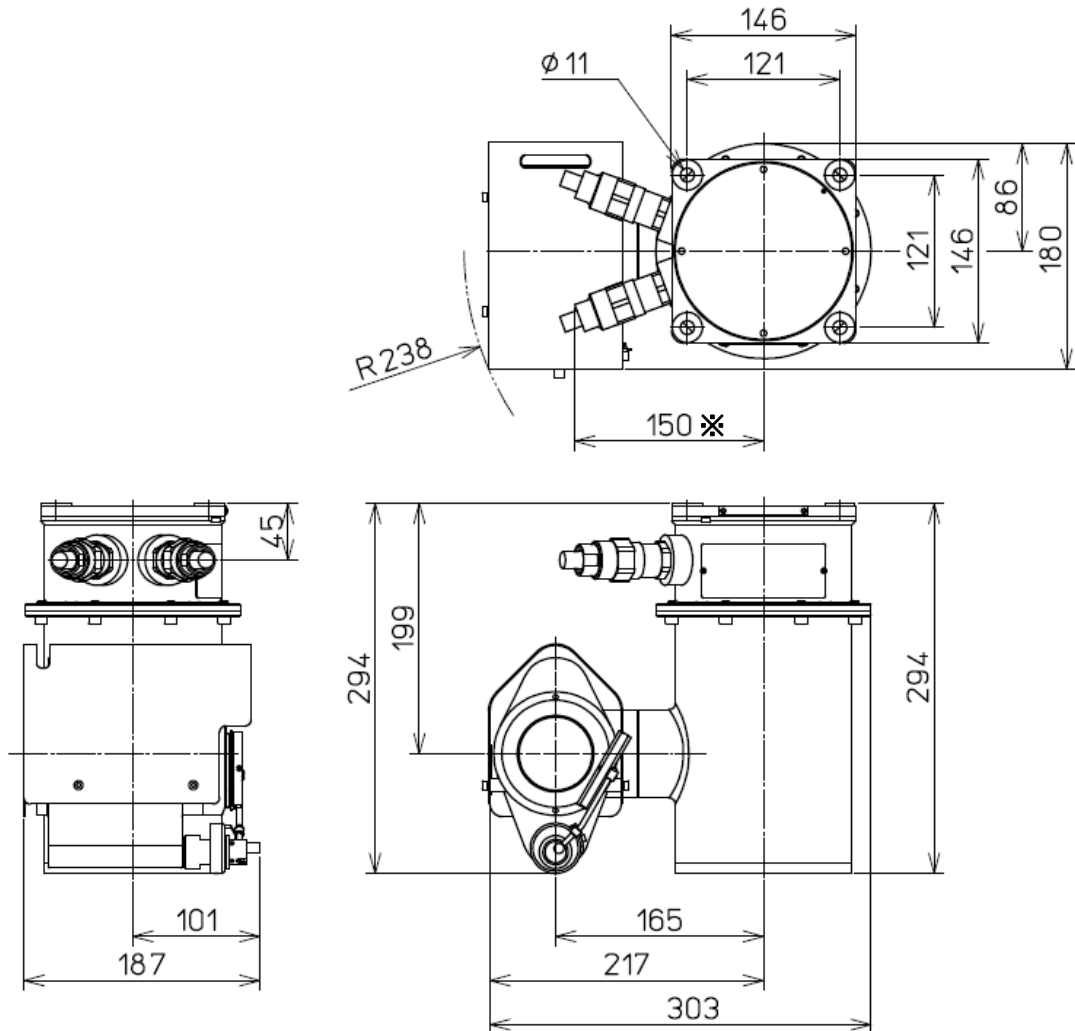
Item		Description
Video	Image Sensor	1/2.8" CMOS
	Effective Pixels	Up to 1920x1080p. (2.13 Megapixels)
	Video S/N	> 50 dB
	White Balance	ATW (auto tracing white balance)
	Zoom Magnification	(30x optical) x (12x digital)
	Lens	f: 4.3mm - 129mm, F1.6 - 4.7 (with auto focus)
	Angle of View	63.7° (wide) to 2.3° (tele)
	Compression	H.264, MJPEG
	Frame rate	Maximum 60 fps
	Minimum illumination	Normal Sensitivity
High Sensitivity		ICR-Off mode 0.01 lux (1/30 sec, 50%) 0.0013 lux (1/4 sec, 1/3 sec, 50%) ICR-On mode 0.0015 lux (1/30 sec, 50%) 0.0008 lux (1/4 sec, 1/3 sec, 30%)
I/O	Interface (at an internal board)	10BASE-T IEEE 802.3, 100BASE-TX IEEE 802.3u
	Client PC requirements	Windows10 (Browser: Internet Explorer 11 only)
	Password level	Administrator / User (when network login)
	Communication	ONVIF® (Profile S) Fieldeye command (Web application for Full HDIP type)
	Supported Protocols	IPv4, TCP, UDP, HTTP, RTSP, RTP, NTP, SNMP, (HTTPS);
Main Body	Housing Material	Die Casted SS316L (Stainless steel) no welding parts
	Finish	Electrolytic Polishing
	Weight	20kg (except cable(s))
Cable Entry	Cable (2-port)	- For Composite-cable input (LAN Cat 5e cable and relay-connection 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	Power Supply (rated value)	100 to 240 V AC~, 50/60Hz
	Power Consumption	30W (heater on) / 24W (heater off), 60VA (0.6A)
	Relay Output circuit	Single(1-A)contact,Max:DC48V,100mA
Environment	Operation Temp/Humidity	-40°C to +60°C (-40°F to +140°F) / 20 to 95% RH
	Installation location	Maximum altitude of 2000 m
Others	Preset points	128 points, Preset Accuracy:±0.25°(PAN/ TILT)
	Wiper	Option
	Defroster	Standard equipment
Certifications	ATEX Flameproof "db " Dust-ignition "tb"	CML 14ATEX1097X (EN60079-0:2018, EN60079-1:2014, EN60079-31:2014)  II 2GD Ex db IIC T5 Gb Ex tb IIIC T100°C Db
	IECEX Flameproof "db " Dust-ignition "tb"	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
	CSA Flameproof "db "	Certificate: 80009215 (CAN/CSA-C22.2 No. 60079-0:19, CAN/CSA-C22.2 No. 60079-1:16 CAN/CSA-C22.2 No. 61010-1:12, CSA-C22.2 No.94.2-15) Class 2258 02- PROCESS CONTROL EQUIPMENT- For Hazardous Locations Ex db IIC T5 Gb
	Degree of protection of enclosure	IP66
		EN55032:2012 Class A EN50130-4:2011+A1:2014 EN61000-3-2:2014 EN61000-3-3:2013 LVD EN61010-1(2010) RoHS

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

● Full HD IP / Inverted Type FC33□-D□□□□ U

Note1: Effective depth 4 x M10-bolts within tapped-(threaded)-material: 6 or more

Note2: Fix certainly 2 cables form the main-body to the ceiling.

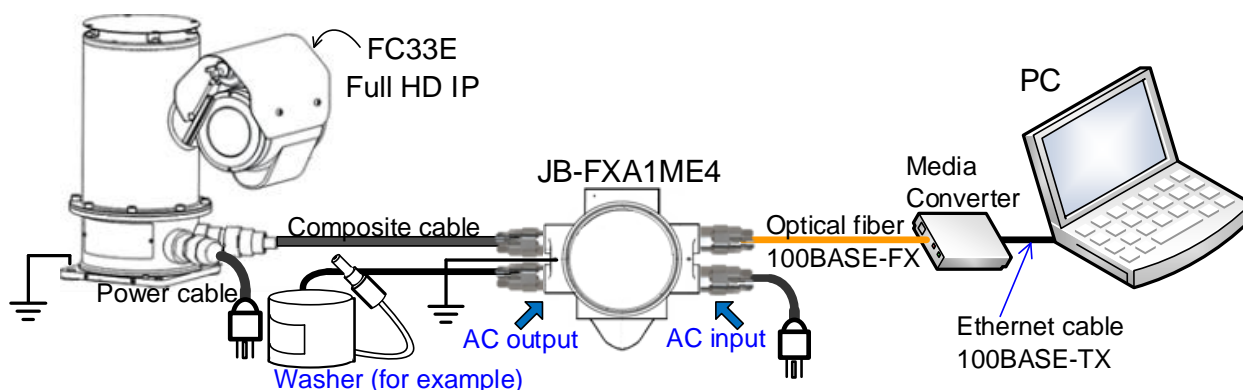


※ NOTE: This description's size ≤ 150 , when FC33E/U-□□□□□ only.

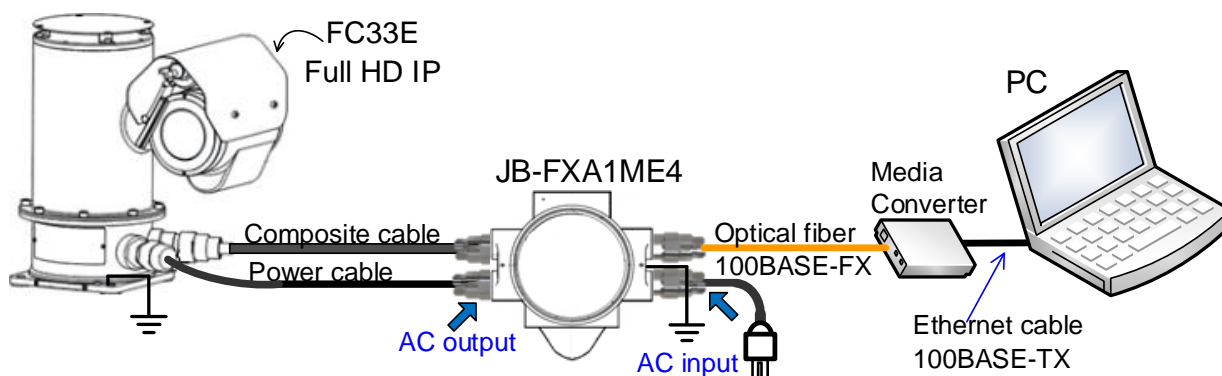
EXTERNAL CONNECTION (EXAMPLE)

• These diagrams below are using “JB” as an external option of the Full HD IP type.

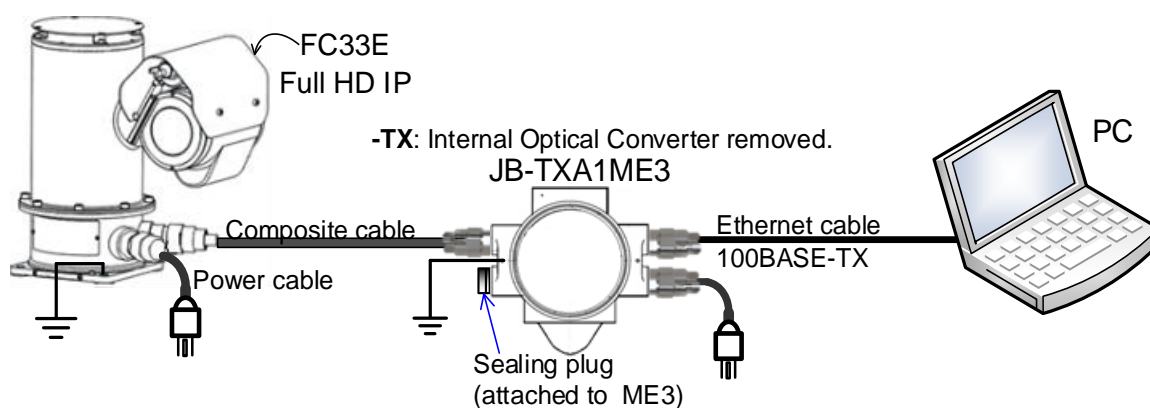
(1) Using an Optical fiber



(2) Using Optical cable (without peripheral equipment)





(3) Using LAN cable (without peripheral equipment)



■ 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) to 1.7° (tele)
	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)	0.5 lx Color typical 0.04 lx Color typical
	Shutter speed: -NTSC:1/60 sec -PAL:1/50 sec	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)
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	20kg (except cable(s))
Cable Entry	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	Power Supply (rated value)	100 to 240 V AC~, 50/60Hz
	Power Consumption	25W (with heater) 60VA (0.6A)
Environment	Operation Temp/Humidity	-40°C to +60°C (-40°F to +140°F) / 20 to 95% RH
	Installation location	Maximum altitude of 2000 m
Others	Preset points	128 points, Preset Accuracy: ±0.5° (PAN/ TILT)
	Wiper	Option
	Defroster	Standard equipment
Certifications	ATEX Flameproof "db" Dust-ignition "tb"	CML 14ATEX1097X (EN60079-0:2018, 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"	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	IP66
		EN61326-1:2013 Class A Table2 EN55011:2009+A1:2010 Class A Group1 EN55011:2016+A1:2017 Class A Group1 EN61000-3-2:2014 EN61000-3-3:2013 LVD EN61010-1(2010) RoHS

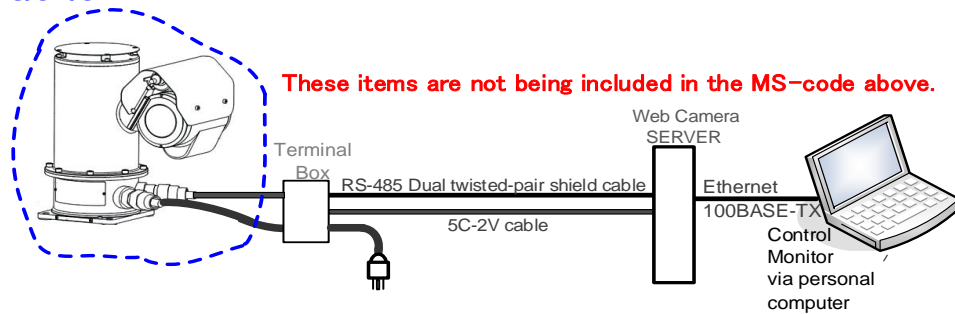
Note: This product is designed only for large industrial equipment.

■ BODY CONNECTION CABLES

Analog type:

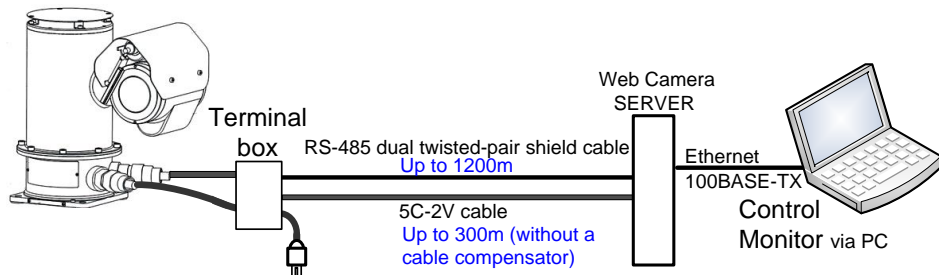
Cable type		Device to be Connected (via the Terminal box)		
		Symbol / Type	(Connected to:)	
Power cable (Default length 5m, non-removable from the body) (AWG16 equivalent)	Brown	L	(AC power line)	
	Blue	N		
	Green yellow	GND	(AC power ground)	
Composite cable (Default length 5m, non-removable from the body)	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 cable	TXD+	Web camera server (RS-485 terminals) → EXAMPLE (1) or Full-duplex converter and so on. (RS-485 terminals) → EXAMPLE (2)
		White twisted pair cable	TXD-	
		Orange twisted pair cable	RXD+	
White twisted pair cable		RXD-		
Shield	FG (as needed)			

FC33E-PWS1S/SH/SD

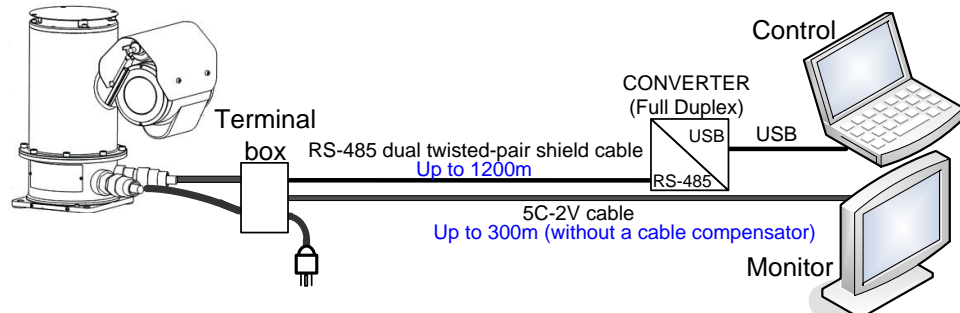


■ EXTERNAL CONNECTIONS (EXAMPLE)

(1) Connection to a Web Camera serve:



(2) Direct Connection to a PC

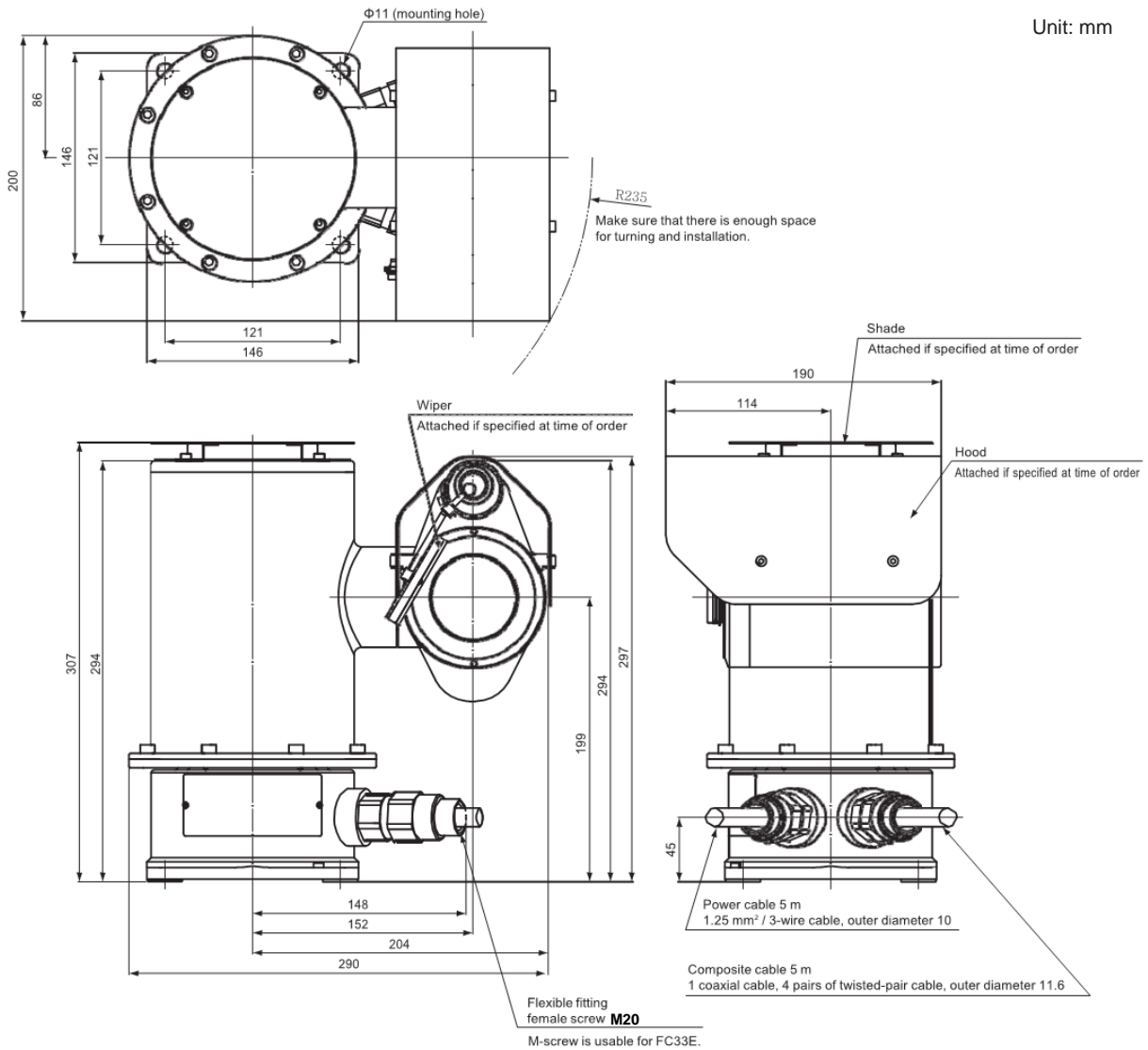


NOTE): Terminal box: Prepared by customer.

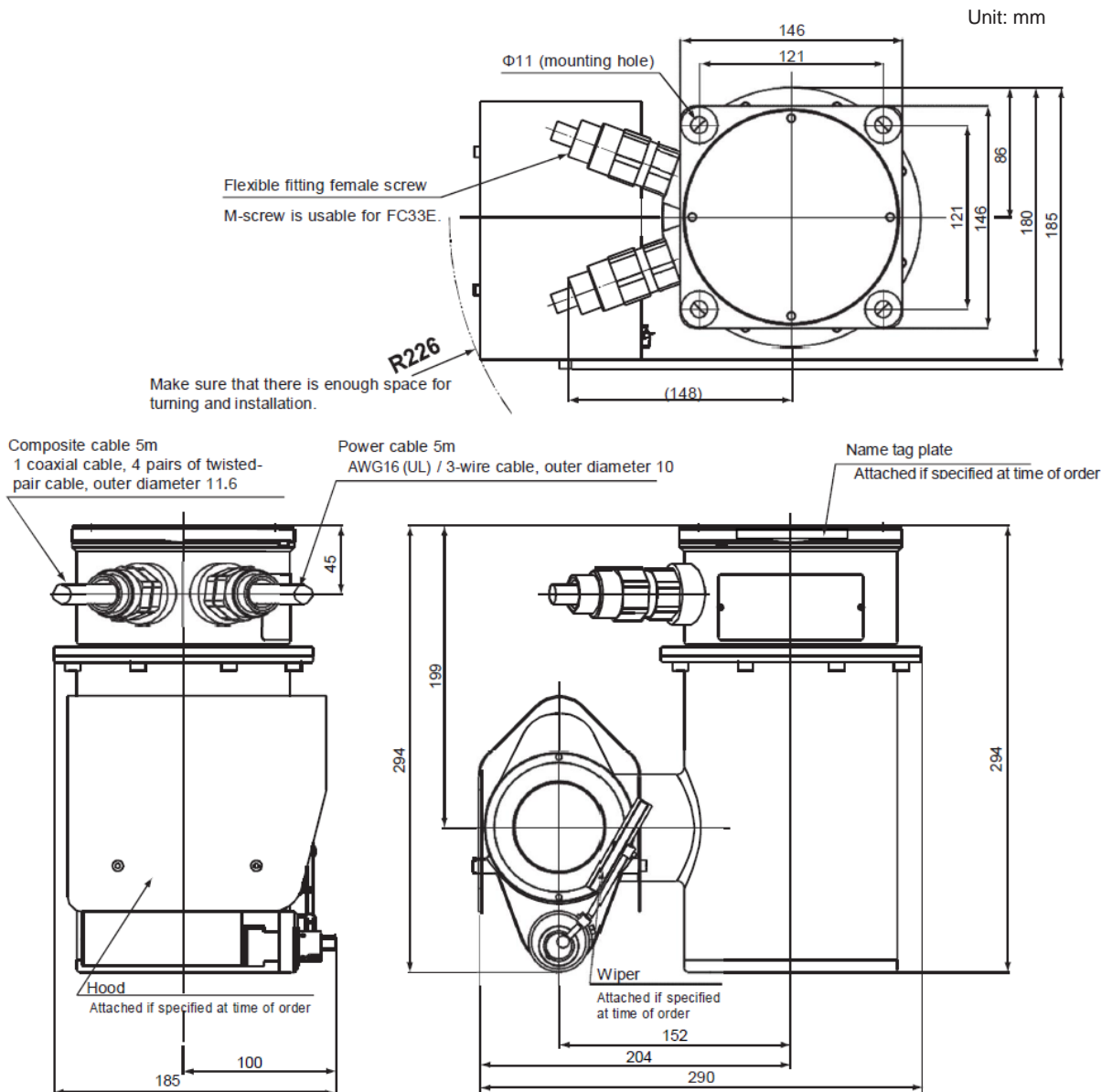
External dimensions of the Analog Type

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

Unit: mm

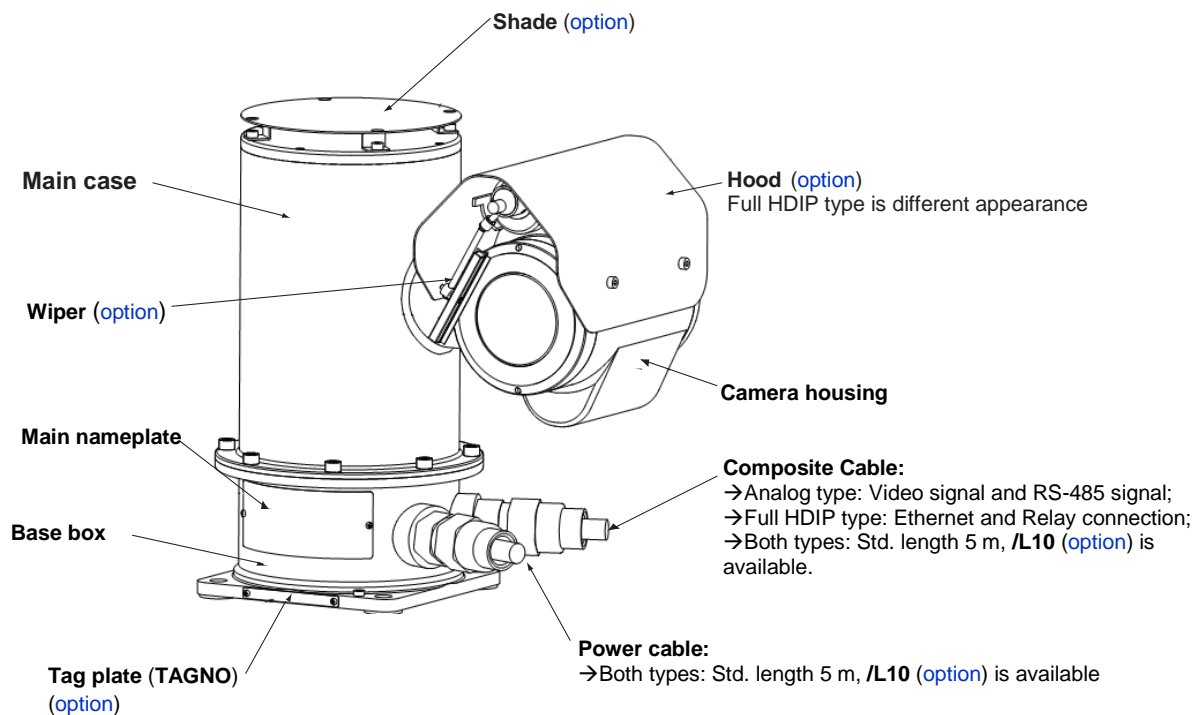


• Analog /Inverted Type:
FC33□- P(N)□□□U



■ Designating option codes for making your order

For common use DIAGRAM of both the Full HD IP and Analog Type



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