# RIF600W ULTRASONIC CLAMP-ON FLOW METER

## RIF600W | Wall Mounted Ultrasonic Flowmeter

The RIF600W ultrasonic flow meter uses the proven clamp-on transit-Time correlation technique.
The ultrasonic transducers are simply clamped onto the outside of the pipe and never come in contact with the fluid. The Flowmeter is widely used to measure different kinds of liquids.
Transmitter and transducer install seperately and the transmitter can be installed at indoor.


### Applications

Measurement of liquid flows and consumption such as:

- Chemical addition
- Cooling and heating water
- Drinking water
- Broad range of refined hydrocarbons
- Potable water
- De-ionized and demineralized water
- Sanitary flow rate measurements
- Purified water

*Ultrasonic transmitter*

### Features

**High Accuracy:** Accuracy better than 1%

- **Measure Range:** Select different model sensors, can achieve DN15-DN6000mm pipe flow measurement
- **High Reliability:** Adopt low voltage,multi-pulse radiating circuit. Accuracy,Lifetime and Reliability are better.
- **High Anti-interference**: Adopt double balanced signal differencial transmission,receving circuit, effective resist the drive,tower, Strong power lines and other source of interference.
- **Powerful Memory Function**: Automatic memory the cumulative flow of 512 days before, 128 months before, 10 years before. Automatic memory the power-on and off of 64times before and the flow. Automatic memory the meter working condition of 32days before.
- **Support Temperature Sensor**: Connect with Temperature sensor,it can meaure heat flow.
- **Support SD card memory:** Select SD card memory,it can realize mass storage by ultrasonic flowmete

Ultrasonic transducer pair, screw terminals

### Accessories:

Gel for ultrasonic clamp-on transmitters.

Clamp on temperature sensors are used for energy calculation in heating and cooling systems

## Technical Parameters

| | | |
|---|---|---|
| Transmitter | Principle | Ultrasonic transit-time principle, Four-byte IEEE754 floating-point arithmetic |
| | Accuracy | Better than ±1% |
| | Display | LCD display with Italian, English language |
| | Output | One 4-20mA Current output, Impedance 0-1K, Accuracy 0.1% |
| | | One OCT Pulse output( Width 6-1000ms, Default200ms) |
| | | One Relays output |
| | Input | Three 4-20mA Current input,accuracy 0.1%, can collect temperature, pressure, level signals etc |
| | | Can connect with three-wire PT100 Plastnium resistance to measure heat flow |
| | Data Interface | Isolated RS485 interface, can upgrade flowmeter through PC,support modbus |
| Cable | | Normal below 50m; Select RS485 Communication,Transmission distance can over thousand meters |
| Pipe Condition | Material | Steel,Stainless steel, Cast iron, Copper, PVC, Aluminium, FRP etc. (liner allowed) |
| | Diameter | 15~6000 mm |
| | Installation | Upstream 10D, downstream 5D; 30D away from the pump outlet (D for diameter) |
| Medium | Fluid | Water, Sea water, Acid liquid, Beer, Alcohol, Oil and any other liquid that can spread sonic |
| | Temperature | -30÷160°C |
| | Turbidity | 10000 ppm and with little bubbles |
| | Velocity | 0...±10m s |
| Operating Enviroment | Temperature | Transmitter: -20÷60°C; TransducerS: -30÷160°C |
| | Humidity | Transmitter:85%RH; Transmitter protection grade: IP65; Clamp-on sensors grade: IP68 - Water Depth<2m |
| Power Supply | | DC8-36V or AC85-264V |
| Comsumption | | 1.5W |

## Measurement composition

| | Flow Measurement | Heat/Cold Measurement | Feature |
|---|---|---|---|
| Clamp-on Type |  |  | • Installation without drying up, no pressure loss<br>• Easy installation and maintenance<br>• Mating clamp temperature sensor that can measure the temperature of the outside of tube to achieve heat measure |
| Insertion Type |  |  | • Installation without drying up, no pressure loss<br>• Stable and reliable during lont-term operation<br>• Mating clamp temperature sensor that can measure the temperature of the outside of tube to achieve heat measure |
| Pipe Type |  |  | • Installation require drying off the pipe<br>• High accuracy,Stable and reliable during lont-term operation<br>• Mating clamp temperature sensor that can measure the temperature of the outside of tube to achieve heat measure |

## Transducers

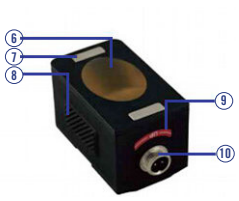
| | Picture | Specification | Model | Pipe size | Temperature | Dimensions |
|---|---|---|---|---|---|---|
| High temperature clamp-on type |  | Small | TS-2-HT | DN15÷DN100 | -30÷160 °C | 45X25X32 mm |
| |  | Medium | TM-1-HT | DN50÷DN700 | -30÷160 °C | 64x39x44 mm |
| |  | Large | TL-1-HT | DN300÷DN6000 | -30÷160 °C | 97x54x53 mm |

## Temperature Sensor

| Picture | Specification | Model | Measurement Range | Temperature Range | Installation Requirements | Accuracy |
|---|---|---|---|---|---|---|
|  | Three Wire PT100<br>Clamp Temperature Sensor | CT-1 | ≥ DN50 | -40 ÷ 160 ° C | No need cut flow | 100 °C ± 0.8°C<br>Temperature differece ≤ 0.1 °C<br>after match accurately |
|  | Three Wire PT100<br>Insertion Temperature Sensor | TCT-1 | ≥ DN50 | -40 ÷ 160 ° C | Need cut flow | |
|  | Three Wire PT100<br>pressure installation insertion temperature sensor | PCT-1 | ≥ DN50 | -40 ÷ 160 ° C | No need cut flow | |
|  | Small size three wire PT100<br>Insertion Type temperature sensor | SCT-1 | < DN50 | -40 ÷ 460 ° C | Need cut flow | |

## Clamp on sensor components


1. Fasten belt slot
2. Steel wire slot
3. Steel belt slot
4. Top cover fasten bolts
5. Signal emission direction arrow



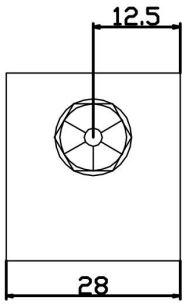

6.Sound wedge
7. High temperature powerful magnet
8. Anti-skid slot
9. Up e Down stream lable
10. Cable entry

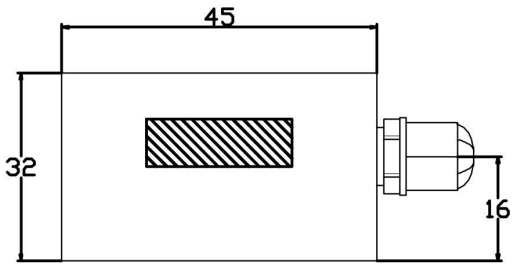

11. Installation position start measuring place
12. Product info label


13. Positive pole wiring
14. Negative pole wiring
15. Grounding wiring
16. Terminal box

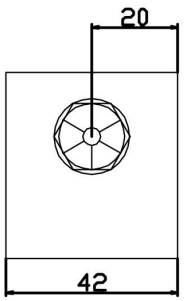
## Transducers drawings

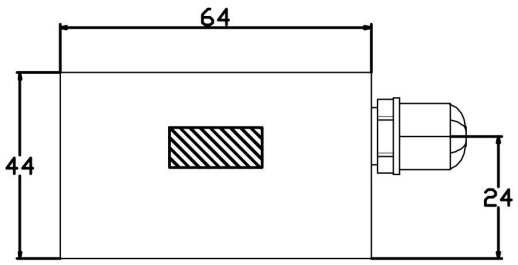
Small Size Transducer DN15÷DN100



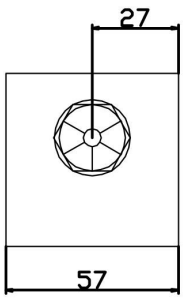



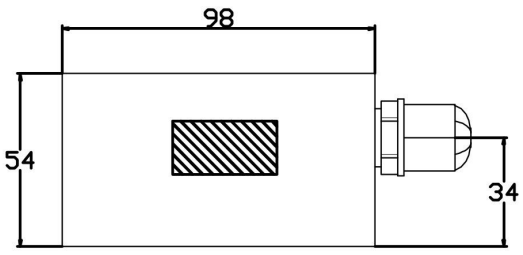

Medium Size Transducer DN50÷DN700

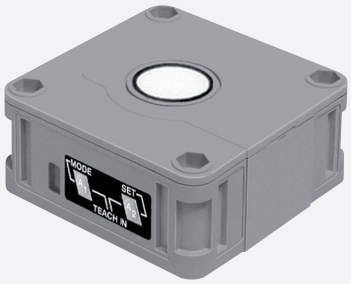



Large Size Transducer DN300÷DN6000





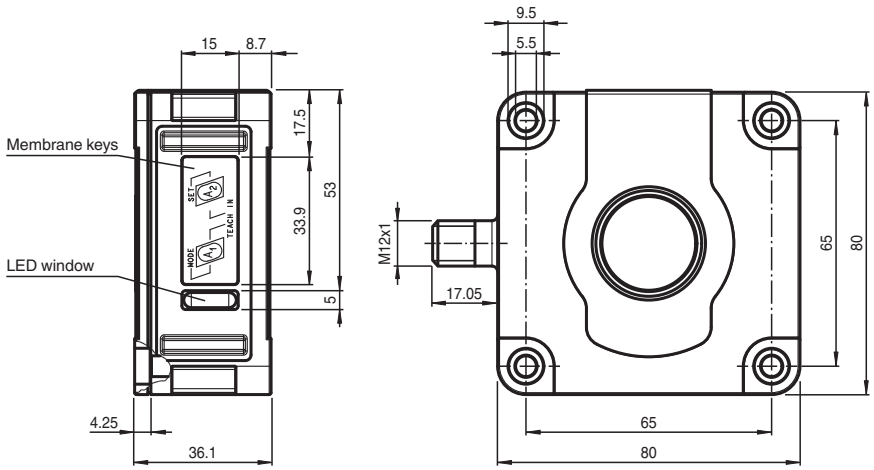

# Ultrasonic sensor

# UB2000-F42-I-V15

- Analog output 4 mA ... 20 mA
- Extremely small unusable area
- TEACH-IN
- Interference suppression (adjustable divergence of sound cone in close range)
- Temperature compensation
- Synchronization options
- Mode of operation adjustable

Single head system

## Dimensions




## Technical Data

| | | |
|---|---|---|
| **General specifications** | | |
| Sensing range | | 60 ... 2000 mm |
| Adjustment range | | 90 ... 2000 mm |
| Dead band | | 0 ... 60 mm |
| Standard target plate | | 100 mm x 100 mm |
| Transducer frequency | | approx. 175 kHz |
| Response delay | | approx. 150 ms |
| **Indicators/operating means** | | |
| LED green | | solid green: Power on |

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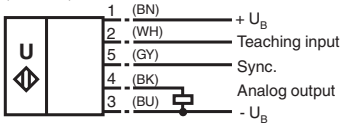
## Technical Data

| | | |
|---|---|---|
| LED yellow | | solid: object in evaluation range<br>flashing: program function |
| LED red | | normal operation: "fault"<br>program function: no object detected |
| **Electrical specifications** | | |
| Operating voltage | $U_B$ | 10 ... 30 V DC , ripple 10 %$_{SS}$ |
| No-load supply current | $I_0$ | ≤ 50 mA |
| **Input/Output** | | |
| Synchronization | | bi-directional<br>0 level -$U_B$...+1 V<br>1 level: +4 V...+$U_B$<br>input impedance: > 12 KOhm<br>synchronization pulse: ≥ 100 µs, synchronization interpulse period: ≥ 2 ms |
| Synchronization frequency | | |
| Common mode operation | | max. 30 Hz |
| Multiplex operation | | ≤ 30/n Hz, n = number of sensors |
| **Output** | | |
| Output type | | 1 analog output 4 ... 20 mA |
| Default setting | | evaluation limit A1: 90 mm , evaluation limit A2: 2000 mm , wide sound lobe |
| Resolution | | 0.7 mm |
| Deviation of the characteristic curve | | ± 1 % of full-scale value |
| Repeat accuracy | | ± 0.1 % of full-scale value |
| Load impedance | | 0 ... 300 Ohm |
| Temperature influence | | ± 1 % of full-scale value |
| **Compliance with standards and directives** | | |
| Standard conformity | | |
| Standards | | EN IEC 60947-5-2:2020<br>IEC 60947-5-2:2019<br>EN 60947-5-7:2003<br>IEC 60947-5-7:2003 |
| **Approvals and certificates** | | |
| UL approval | | cULus Listed, Class 2 Power Source |
| CCC approval | | CCC approval / marking not required for products rated ≤36 V |
| **Ambient conditions** | | |
| Ambient temperature | | -25 ... 70 °C (-13 ... 158 °F) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| **Mechanical specifications** | | |
| Connection type | | Connector plug M12 x 1 , 5-pin |
| Degree of protection | | IP54 |
| Material | | |
| Housing | | ABS |
| Transducer | | epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT |
| Mass | | 140 g |

## Connection

**Standard symbol/Connections:**
(version I)




Core colours in accordance with EN 60947-5-2.

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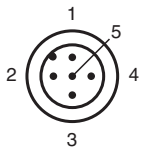
## Connection Assignment

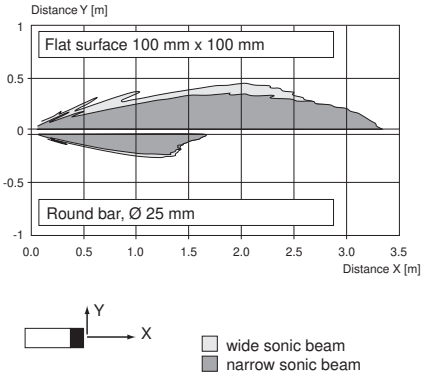



Wire colors in accordance with EN 60947-5-2

| | | |
|---|---|---|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |
| 5 | GY | (gray) |

## Characteristic Curve

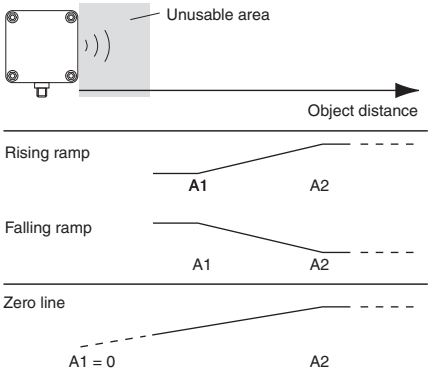
### Characteristic response curve







### Analogue output programmation




## Accessories

| | | |
|---|---|---|
|  | **MH 04-3505** | Mounting aid for FP and F42 sensors |
|  | **MHW 11** | Mounting brackets for sensors |
|  | **V15-G-2M-PVC** | Female cordset single-ended M12 straight A-coded, 5-pin, PVC cable grey |

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## Accessories

| | | |
|---|---|---|
|  | **V15-W-2M-PUR** | Female cordset single-ended M12 angled A-coded, 5-pin, PUR cable grey |

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## Programming

### Functional Description

The sensor may be completely parameterised via two keys on the side panel of the housing. As a special feature provided by this sensor, the ultrasound beam width may be adapted to the environmental conditions at the place of operation of the sensor.

**Specifying the evaluation limits:**

The evaluation limits determine the characteristic line and the working range of the analog output.

| Specifying the A1 evaluation limit by pressing the A1 key | |
|---|---|
| Holding down the A1key > 2 seconds | The sensor switches to learn mode and the user may specify the A1 evaluation limit |
| Position the target object at the desired distance | The yellow LED of the sensor flashes fast to indicate that the target object is recognised. The red LED flashes if the object is not recognised. |
| Briefly pressing the A1 key | The sensor terminates the specification of the A1 evaluation limit and saves it as a non-volatile value. The specified value is invalid if the object is uncertain (i.e. the red LED lights up at irregular intervals). The learn mode is exited. |

**The A2 evaluation limit is specified via the A2 key, analogous to the description above.**

Alternatively, the evaluation limits may also be specified electrically via the learn input. To specify the A1 evaluation limit, the learn input must be connected to
$-U_B$; to specify the A2 evaluation limit, it must be connected to $+U_B$. Specified values are saved upon the disconnection from the learn input.

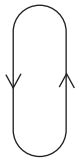
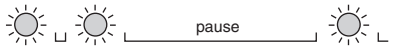
Evaluation limits may only be specified within the first 5 minutes after Power on. To modify the evaluation limits later, the user may specify the desired values only after a new Power On.

**Proceed as follows to parameterise the output function and the ultrasound beam width:**

Press the A1 key during Power on and hold down the key for another second to ensure that the sensor starts the two-step parameterisation of the operating modes.

**Step 1, parameterisation of the output function**

The output function parameterised last is displayed. All output functions available may be selected via consecutive, brief strokes of the A2 key. These strokes are visualised via short flashes of the green LED.

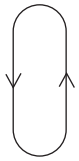
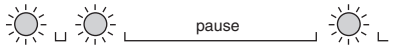
| Operating mode | Flash sequence of the green LED | A2 key |
|---|---|---|
| Rising edge |  |  |
| Falling edge |  | |
| Zero point straight line |  | |

The "Zero point straight line“ setting fixedly specifies the A1 evaluation limit to 0 (see specification of the evaluation limits). The A2 evaluation limit determines the steepness of the output characteristic line.

Hold down the A1 key for 2 seconds to save the selected output mode, complete the parameterisation and ensure that the sensor returns to normal mode. If you briefly press the A1 key, Step 2 is entered (parameterisation of the ultrasound beam width).

**Step 2, parameterisation of the ultrasound beam width**

Via Step 2, the ultrasound beam width may be adapted to the requirements of the corresponding application.
The beam width parameterised last is displayed first. Available beam width settings may be selected via consecutive, brief strokes of the A2 key. These strokes are visualised via the flash sequence of the red LED.

| Beam width | Flash sequence of the red LED | A2 key |
|---|---|---|
| Small beam |  |  |
| Medium beam |  | |
| Large beam |  | |

Hold down the A1 key for 2 seconds to save the selected beam shape, terminate the parameterisation and ensure that the sensor returns to normal mode. Briefly press the A1 key to return to Step 1 (parameterisation of the output function).

If the parameterisation mode is not terminated within 5 minutes (hold down the A1 key for 2 seconds), the sensor aborts this mode without modifying the settings.

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**Synchronisation**

The sensor provides a synchronisation port to suppress mutual influencing. If this port has not been connected, the sensor works at an internally generated cycle rate. Several sensors may be synchronised via the following options.

External synchronisation:
The sensor may be synchronised via the external application of a square wave voltage. A synchronisation pulse on the synchronisation input initiates a measuring cycle. The pulse width must be greater than 100 µs. The measuring cycle is started with the falling edge. A low level > 1 s or an open synchronisation input initiate the transition to normal sensor mode. A high level on the synchronisation input deactivates the sensor.

Two modes are possible:

- Several sensors are controlled via the same synchronisation signal. The sensors work in common mode.
- The synchronisation pulses are forwarded at cyclic intervals to respectively one single sensor. The sensors work in multiplex mode.

Self-synchronisation:
The synchronisation ports of up to 5 sensors suitable for self-synchronisation are connected to each other. These sensors work in multiplex mode after Power on. The On delay increases depending on the number of sensors to be synchronised. While the learn mode is active, no synchronisation is possible (and vice-versa). To specify the switching points, the sensors must be operated in non-synchronised mode.

**Note:**

If the synchronisation option is not used, the synchronisation input must be connected to ground (0V) or the sensor must be operated with a (4-pole) V1 connecting cable.

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**IPBCAMA04FB**

# TELECAMERA IP BULLET 4MP 2.8MM


ADVANCE SERIE

Telecamera IP bullet serie Advance, ottica fissa 2.8 mm, risoluzione 4MP@30 fps, funzione High frame rate supportata (2MP@60 fps). Led IR con portata di 50 metri (Smart IR), compatibile ONVIF. La funzione high frame (60fps) è supportata solo dagli NVR serie Advance 32/64/128ch. Funzioni di analisi video: Rilevamento cambiamento scena, Funzione oggetto abbandonato / rimosso, heat map, Face detection, Rilevamento manomissione video, Rilevamento attraversamento linea (distinzione tra esseri umani / veicoli), Rilevamento Ingresso / Uscita / Intrusione nell'area (distinzione tra esseri umani / veicoli), Conteggio esseri umani / veicoli su linea e in area. WDR 120Db, compressione H.265+/H.265/H.264+/H.264/MJPEG, slot SD (max 256GB). Audio: 1 in. Contenitore in alluminio pressofuso waterproof IP67, alimentazione 12VDC/ PoE IEEE802.3af. Compatibile con browser: IE/Google Chrome/Edge/Firefox/Safari. Accessori compatibili: JBA-BA, CMA-BA, WMA-BA, PMA-A, AMA-A.

## AWARDS

NDAA COMPLIANT

**IPBCAMA04FB**

# TELECAMERA IP BULLET 4MP 2.8MM

| CARATTERISTICHE PRINCIPALI | |
|---|---|
| Sensore telecamera | 1/3'' CMOS |
| Dimensioni obiettivo ottica fissa (mm) | 2,8 |
| Campo visivo orizzontale (°) | 100 |
| Campo visivo verticale (°) | 53 |
| Campo visivo diagonale (°) | 115.2 |
| Shutter elettronico (s) | 1/25÷100000 |
| Sensibilità | 0.005 (colori), 0 (bianco e nero, led IR ON) |
| Rapporto segnale/rumore (dB) | >50 (AGC OFF) |
| Filtro IR | Meccanico |
| Trasmissione video | Triple streaming |
| Software di gestione | Comelit CCTV Manager |
| Risoluzione video (H x V - pixel) | 2592x1520 (4MP) |

| CARATTERISTICHE SOFTWARE/FIRMWARE | |
|---|---|
| Compressione video | H.264 / H.264+ / H.265 / H.265+ |
| Frame rate | 30/60fps |
| Protocolli supportati | DDNS, Comelit DNS, DHCP, FTP, HTTP, HTTPS, IPv4, IPv6, NTP, PPPoE, QoS, RTSP, SMTP, UDP, UPnP, SNMP, IEEE 802.1x, ONVIF - (Profile-S, Profile-G), RTMP |
| Aggiornamento firmware tramite rete | Sì |
| Utenti collegati contemporaneamente | 10 (live) |
| Sicurezza della rete | Autorizzazione multi-utente, HTTPS, cifratura AES, verifica RTSP |
| Visualizzazione remota da browser | Internet Explorer, Firefox, Chrome, Safari |
| Controllo remoto da mobile | APP Comelit CCTV |

| FUNZIONI | |
|---|---|
| Motion detection (zone) | 396 |

**IPBCAMA04FB**

# TELECAMERA IP BULLET 4MP 2.8MM

| FUNZIONI | |
|---|---|
| Analisi video | Rilevamento cambiamento scena, Riconoscimento facciale, Rilevamento manomissione video, Rilevamento attraversamento linea (distinzione tra esseri umani / veicoli), Rilevamento Ingresso / Uscita / Intrusione nell'area (distinzione tra esseri umani / veicoli), Rilevamento oggetto abbandonato / rimosso, Conteggio esseri umani / veicoli, Heat map, Analisi metadati, Parcheggio vietato, Vagabondaggio, Anomalia audio |
| Zone di privacy (n°) | 4 |
| Compensazione contro luce (BLC) | BLC, HLC |
| Effetti digitali | Modalità Corridoio (rotazione 90° / 180° / 270°), Defog, Specchio (Ortizzontale, Verticale, Rotazione 180°), Zone ROI, Correzione distorsione lente |
| Wide Dinamic Range (WDR) | WDR (120dB) |
| Controllo DNR | 3D-DNR |
| Regolazione bilanciamento dei bianchi | AWB, Interni, Manuale, Esterni |
| Regolazione luminosità | Sì |
| Ribaltamento immagine | Sì |
| Controllo guadagno automatico (AGC) | Sì |
| Titolazione telecamera | Sì |

| CARATTERISTICHE HARDWARE | |
|---|---|
| Distanza illuminazione led IR | 3 led arrays / 30m (Smart IR) |
| Grado di protezione antivandalo IK | IK10 |
| Grado di protezione IP | IP67 |
| Ingressi/uscite audio | 1 (RCA) / - (G.711u / G.711a) |
| Tipo di uscita LAN | Ethernet 10/100 Mbit/s (RJ45) |
| Supporto scheda SD (scheda non fornita) | Micro-SD (256GB max) |

| DATI GENERALI | |
|---|---|
| Tensione di alimentazione | 12VDC |
| Assorbimento max (W) | 8,5 |

**IPBCAMA04FB**

# TELECAMERA IP BULLET 4MP 2.8MM

| DATI GENERALI | |
|---|---|
| Alimentazione PoE | Standard IEEE 802.3af |
| Tipo di alimentazione | PoE, Alimentazione esterna |
| Altezza (mm) | 80 |
| Larghezza (mm) | 217 |
| Profondità (mm) | 80 |
| Peso del prodotto (g) | 660 |
| Tipo materiali di rivestimento | Alluminio pressofuso |
| Tipo di case | Bullet |
| Colore del prodotto | Bianco |
| Temperatura di funzionamento (°C) | -30 ÷ 60 |
| Umidità di funzionamento (RH max) (%) | 25 ÷ 95 |

**IPBCAMA04FB**

# TELECAMERA IP BULLET 4MP 2.8MM

## ACCESSORI

**JBA-BA**

**BOX CONNESSIONE IP66 ADVANCE NEXT**

Junction box per il fissaggio di telecamere Next e Advance. Per la compatibilità con i modelli fare riferimento allo schema nella sezione download.

**WMA-BA**

**STAFFA A MURO ADVANCE NEXT**

Supporto per il montaggio a parete di telecamere Next e Advance. Per la compatibilità con i modelli fare riferimento allo schema nella sezione download.

**PMA-A**

**STAFFA A PALO ADVANCE NEXT**

Accessorio per il montaggio a palo di telecamere Next e Advance. Per la compatibilità con i modelli fare riferimento allo schema nella sezione download. Diamtero del palo da 80 a 140mm.

**CMA-BA**

**STAFFA A SOFFITTO ADVANCE NEXT**

Accessorio per il montaggio a soffitto di telecamere Next e Advance. Per la compatibilità con i modelli fare riferimento allo schema nella sezione download.

**AMA-A**

**STAFFA A ANGOLO ADVANCE NEXT**

Accessorio per il montaggio ad angolo di telecamere Next e Advance. Per la compatibilità con i modelli fare riferimento allo schema nella sezione download.