



# UQ1 series

Cubic Ultrasonic Sensor with M18 head



Cubic Ultrasonic Sensor  
with M18 head

## features

- Models with digital and analog output
- Models with IO-Link output
- Working area adjusting by Teach-in button
- Complete protection against electrical damages
- Plastic housing, M12 plug exit



## web contents



- Application notes
- Photos
- Catalogue / Manuals



## code description

UQ 1 A / G 4 - 0 E IO

|                             |           |  |
|-----------------------------|-----------|--|
| series                      | <b>UQ</b> | M18 Ultrasonic Cubic Sensor                                      |
| function                    | <b>1</b>  | Standard housing   |
| nominal sensing distance Sn | <b>A</b>  | 40...300 mm  |
|                             | <b>C</b>  | 60...800 mm  |
|                             | <b>D</b>  | 80...1.200 mm  |
| adjustment                  | <b>G</b>  | Adjustment by Teach-In button                                    |
| output                      | <b>4</b>  | NPN - NO/NC digital output + 4 ... 20 mA current analogue output |
|                             | <b>6</b>  | PNP - NO/NC digital output + 4 ... 20 mA current analogue output |
|                             | <b>7</b>  | PNP - NO/NC digital output + 0 ... 10 V voltage analogue output  |
|                             | <b>9</b>  | NPN - NO/NC digital output + 0 ... 10 V voltage analogue output  |
| housing materials           | <b>P</b>  | IO-Link output   |
| cable exit / connector      | <b>0</b>  | Plastic housing  |
|                             | <b>E</b>  | M12 plug cable exit  |
| IO-Link                     | <b>IO</b> | IO-Link models   |



## available models

digital + analog mixed outputs

| output         | distance (mm) | adjusting | PNP + 4...20 mA | NPN + 4...20 mA | PNP + 0...10 V | NPN + 0...10 V |
|----------------|---------------|-----------|-----------------|-----------------|----------------|----------------|
| direct diffuse | 300           | yes       | UQ1A/G6-0E      | UQ1A/G4-0E      | UQ1A/G7-0E     | UQ1A/G9-0E     |
|                | 800           |           | UQ1C/G6-0E      | UQ1C/G4-0E      | UQ1C/G7-0E     | UQ1C/G9-0E     |
|                | 1.200         |           | UQ1D/G6-0E      | UQ1D/G4-0E      | UQ1D/G7-0E     | UQ1D/G9-0E     |

## available models

single digital output (IO-Link models)

| output         | distance (mm) | adjusting | IO-Link      |
|----------------|---------------|-----------|--------------|
| direct diffuse | 300           | yes       | UQ1A/GP-0EIO |
|                | 800           |           | UQ1C/GP-0EIO |
|                | 1.200         |           | UQ1D/GP-0EIO |



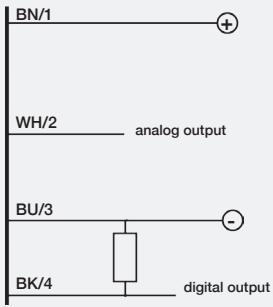
|                                 | UQ1A   | UQ1C                  | UQ1D                    |
|---------------------------------|--|-----------------------|-------------------------|
| nominal sensing distance        | 300 mm <sup>(1)</sup>                                  | 800 mm <sup>(2)</sup> | 1.200 mm <sup>(2)</sup> |
| minimum sensing distance        | 40 mm  | 60 mm                 | 80 mm                   |
| sensing range                   | 40...300 mm  | 60...800 mm           | 80...1.200 mm           |
| beam angle                      | 7° ± 2°  | 8° ± 2°               |                         |
| switching frequency             | 8 Hz   | 5 Hz                  | 3 Hz                    |
| hysteresis                      | 1%   |                       |                         |
| repeatability                   | 1%   |                       |                         |
| linearity error                 | < 1 %  |                       |                         |
| temperature range               | - 20°...+70° C   |                       |                         |
| temperature compensation        | ●  |                       |                         |
| temperature drift of Sr         | ± 5%   |                       |                         |
| operating voltage               | 10...30 V  |                       |                         |
| max. ripple content             | 5%   |                       |                         |
| leakage current                 | ≤ 10 µA @ 30 Vcc                                       |                       |                         |
| output voltage drop             | ≤ 2,2 V (@ IL = 100mA)                                 |                       |                         |
| no-load supply current          | ≤ 35 mA  |                       |                         |
| output current (digital output) | 100 mA   |                       |                         |
| response time analogue output   | ≤ 400 ms   |                       |                         |
| power on delay (digital output) | ≤ 400 ms   |                       |                         |
| short-circuit protection        | ● (autoreset)  |                       |                         |
| induction protection            | ●  |                       |                         |
| voltage reversal protection     | ●  |                       |                         |
| EMC                             | conforming to EMC Directive, according to EN 60947-5-2 |                       |                         |
| weight                          | 30 g   |                       |                         |
| LEDs                            | green: echo - yellow: output                           |                       |                         |
| protection degree               | IP67 (EN 60529)  |                       |                         |
| housing material                | PBT or PA12  |                       |                         |
| active head material            | epoxy glass resin                                      |                       |                         |
| storage temperature             | - 30°C...+ 80°   |                       |                         |

(1) Metallic target 100 x 100 mm (2) Metallic target 200 x 200

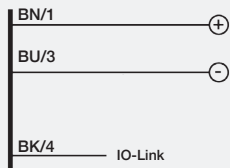


## electrical diagrams of the connections

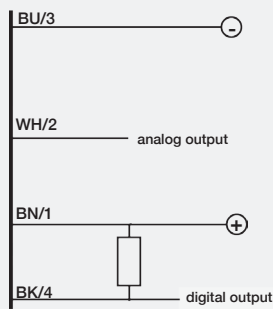
### PNP NO/NC models + analog output



### IO-Link output models

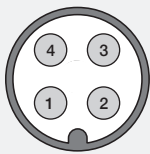


### NPN NO/NC models + analog output



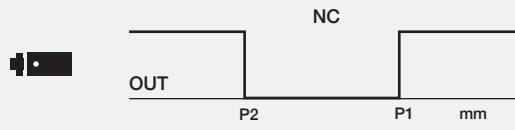
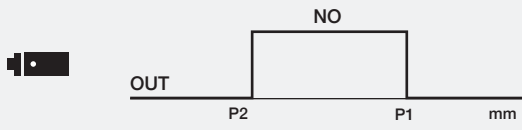
## connectors

### M12



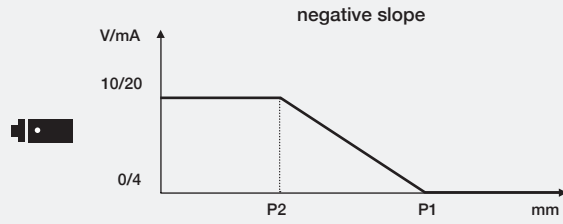
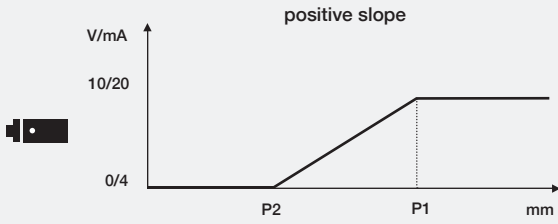


UQ1\*/\*\*\_\*\*



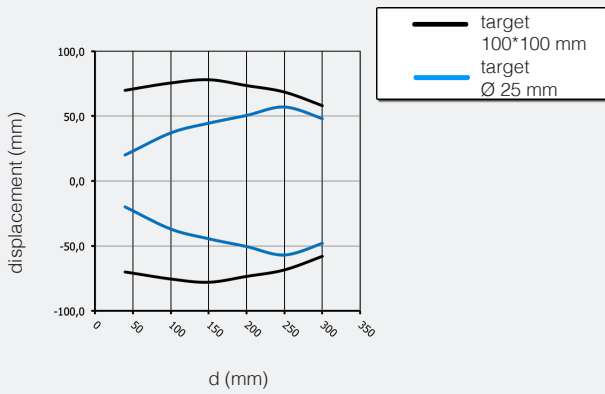
NO

NC

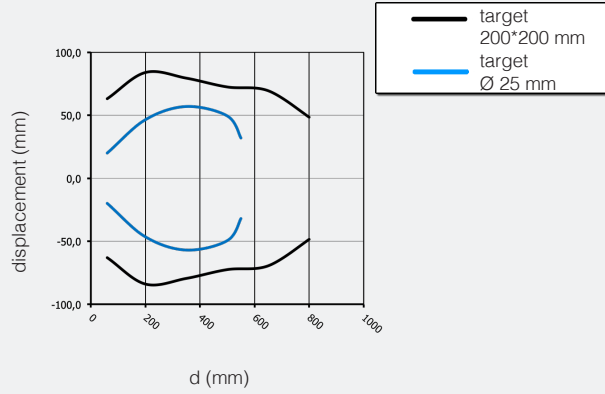


response diagrams

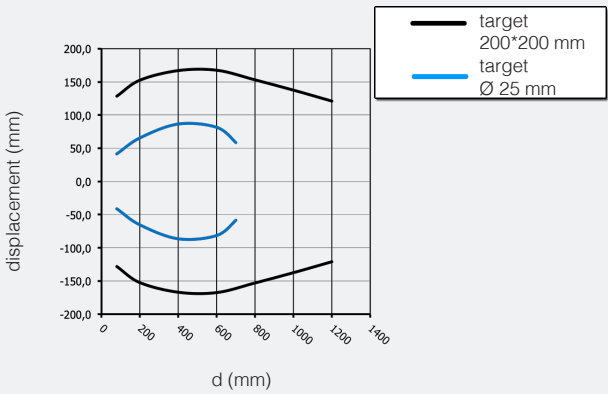
UQ1A/\*\*\_\*\* parallel displacement



UQ1C/\*\*\_\*\* parallel displacement



UQ1D/\*\*\_\*\* parallel displacement

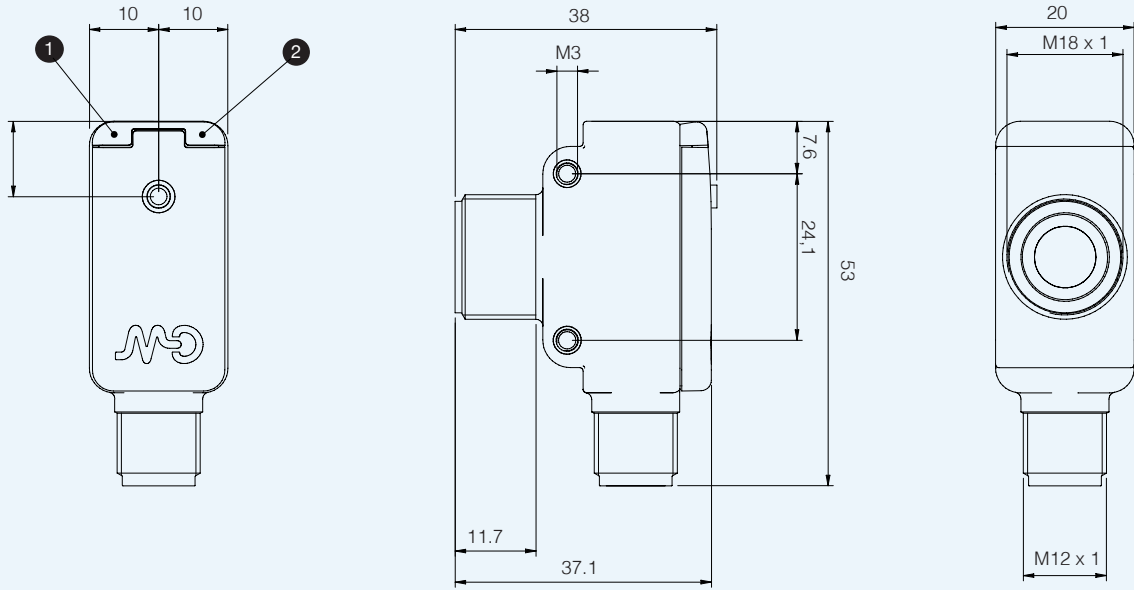




## dimensions (mm)

Cubic Ultrasonic Sensor  
with M18 head

UQ1\*/\*\* - \*\*



1 green LED

2 yellow LED

## dimensions (mm)

included accessories

