

## QFlow QMASS 5503 Coriolis Mass Flowmeter

Ultra-compact DN3 bent-tube Coriolis meter for precise low-flow liquid dosing

### Certifications

Quality Lab Solutions data sheet R4



### Applications

- Oil and gas – chemical injection, small-bore well services and fuel skids
- Chemical processing – catalyst and additive dosing, pilot plants and research skids
- Food and beverage – high-accuracy flavour, colour and enzyme dosing
- Alternative energy – hydrogen, biofuel and specialty fluid metering on test stands
- General industrial utilities – precision low-flow measurement in process and test rigs

### Special Features

- DN3 low-flow sensor – optimised for precise dosing and sampling duties where every kilogram counts.
- High measuring performance – mass flow accuracy options down to  $\pm 0.1\%$  of reading with excellent zero stability.
- Compact hazardous-area transmitter – Ex-certified with integrated display, optical keys and flexible AC or DC power supply.
- Versatile outputs – 4–20 mA, pulse and Modbus or HART for straightforward integration into PLC and DCS systems.



### QMASS 5503

#### Description

The QMASS 5503 is a DN3 bent-tube Coriolis mass flow meter designed for very low flowrates where accuracy and stability are critical. It directly measures mass flow, density and process temperature and can also provide calculated volume and totalised values for both mass and volume. The compact sensor with DN15 flanged connections integrates easily into dosing skids, pilot plants and small-bore process lines without strict straight-run requirements. High accuracy options down to  $\pm 0.1\%$  of reading together with excellent zero stability and wide temperature capability support demanding chemical, oil and gas and clean utility duties. Integral electronics offer 4–20 mA, pulse and Modbus or HART communication with local configuration via an OLED display and optical keys for safe operation in hazardous areas.

## Specifications

| Performance Specifications   |                                                                                                                                                                                                                          |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement Principle        | Coriolis mass flow                                                                                                                                                                                                       |
| Primary Measurement          | Mass flow                                                                                                                                                                                                                |
| Secondary Measurement        | Density; Temperature; Volume flow; Mass and volume totalisers                                                                                                                                                            |
| Line Sizes                   | DN3 measuring tube; DN15 flanged process connections                                                                                                                                                                     |
| Flow Range                   | 0...360 kg/h mass flow                                                                                                                                                                                                   |
| Accuracy                     | Mass flow accuracy $\pm 0.1... \pm 0.5$ % of reading depending on calibration grade                                                                                                                                      |
| Repeatability                | Repeatability $\pm 0.05... \pm 0.25$ % of reading depending on selected grade                                                                                                                                            |
| Zero stability               | 0.012 kg/h                                                                                                                                                                                                               |
| Density Accuracy             | $\pm 0.002$ g/cm <sup>3</sup>                                                                                                                                                                                            |
| Temperature accuracy         | $\pm 1$ °C $\pm 0.5$ % of reading                                                                                                                                                                                        |
| Process & Environment        |                                                                                                                                                                                                                          |
| Medium                       | Single-phase liquids and slurries; suitable for non-Newtonian fluids and suspensions; acceptable for clean or slightly contaminated process media                                                                        |
| Pressure Rating              | 40 Bar                                                                                                                                                                                                                   |
| Medium Temperature           | -200...+300 °C depending on selected temperature option                                                                                                                                                                  |
| Ambient Temperature          | -40...+60 °C depending on transmitter version                                                                                                                                                                            |
| Mechanical/ Wetted Parts     |                                                                                                                                                                                                                          |
| Process connections          | DN15 flanged process connections with 40 Bar rating                                                                                                                                                                      |
| Wetted Parts                 | Measuring tubes and process connections in stainless steel 316L                                                                                                                                                          |
| Housing / Ingress Protection | Sensor and transmitter enclosures rated to IP65/IP67                                                                                                                                                                     |
| Installation                 | Install so the sensor remains completely full; mount at the high point of gas lines and the low point of liquid lines; avoid strong vibration and mechanical stress; align flow arrow with actual process flow direction |
| Grounding                    | Normally grounded via process piping with additional M4 grounding screws on transmitter and junction box plus an internal grounding point inside the junction box                                                        |
| Gross Weight                 | 15.2 kg.                                                                                                                                                                                                                 |
| Electrical & I/O             |                                                                                                                                                                                                                          |
| Power supply                 | 85...265 V AC or 12...24 V DC                                                                                                                                                                                            |
| Analogue Outputs             | One or two 4–20 mA outputs; passive pulse or frequency output for flow; fixed-current and fixed-frequency test modes for loop checking                                                                                   |
| Communication                | Modbus RS485; HART over 4–20 mA                                                                                                                                                                                          |
| Display                      | Integral transmitter with OLED display and two optical touch keys for setup; multi-language menus with user and configuration access levels                                                                              |
| Diagnostic                   | Self-diagnostics with error codes; zero calibration; density calibration; flow and density cut-off; totalisers plus parameter backup and restore                                                                         |
| Approvals/Certification      |                                                                                                                                                                                                                          |
| Hazardous area Approvals     | IECEX certified with Ex II 2G Ex ib IIC T6...T1 Gb sensor and Ex II 2G Ex db [ib] IIC T6...T1 Gb transmitter for Zone 1 and Zone 2 gas atmospheres                                                                       |
| General Approvals            | CE marking with manufacturing under ISO 9001, ISO 14001 and ISO 45001 quality systems; electrical safety and EMC in line with EN 60079 standards                                                                         |
| Functional Safety            | SIL-capable mass flowmeter suitable for integration into safety-related systems subject to loop calculation                                                                                                              |
| Metrological                 | Calibration laboratory accredited to ISO/IEC 17025 with meters tested against national Coriolis mass flowmeter regulations                                                                                               |
| Warranty                     | Standard two-year warranty on sensor and transmitter.                                                                                                                                                                    |

## Sensor model / line size

| Sensor model code (QFlow) | DN (mm) | DN (inch) | Minimum mass flow (kg/h) | Maximum mass flow (kg/h) | Zero stability (kg/h) |
|---------------------------|---------|-----------|--------------------------|--------------------------|-----------------------|
| 5503                      | 3       | 1/8"      | 0.012                    | 360                      | 0.012                 |

## Design Pressure

| Order code | Description / options                                |
|------------|------------------------------------------------------|
| P2         | Design pressure 40 Bar (standard for QMASS 5503)     |
| P9         | Custom design pressure (engineering review required) |

## Accuracy

| Order code | Description / options                   |
|------------|-----------------------------------------|
| A1         | ±0.1 % of rate                          |
| A2         | ±0.15 % of rate                         |
| A3         | ±0.2 % of rate (standard configuration) |
| A5         | ±0.5 % of rate (economic grade)         |

## Medium Temperature Class

| Order code | Description / options                           |
|------------|-------------------------------------------------|
| T1         | -70...+160 °C (standard tube temperature range) |
| T4         | -200...+60 °C (cryogenic option)                |

## Process connection

| Order code | Connection                                                                |
|------------|---------------------------------------------------------------------------|
| C2         | DN15 flanged connection (EN/ASME – match pressure class to 40 Bar rating) |
| C9         | Custom end connection (special flange / threaded / hygienic on request)   |

## Wetted Material

| Order code | Description / options                          |
|------------|------------------------------------------------|
| W1         | 316L stainless steel (standard for QMASS 5503) |
| W9         | Custom wetted material (e.g. Hastelloy C276)   |

## Transmitter

| Order code | Description / options                           |
|------------|-------------------------------------------------|
| TR1        | CF1 field transmitter (standard for QMASS 5503) |

## Transmitter type

| Order code | Description / options                   |
|------------|-----------------------------------------|
| I1         | Remote transmitter (3 m cable standard) |
| I2         | Compact mounting on sensor body         |

## Display

| Order code | Description / options                     |
|------------|-------------------------------------------|
| D0         | Transmitter without local display         |
| D1         | Transmitter with local display (standard) |

## Power supply

| Order code | Description / options                     |
|------------|-------------------------------------------|
| V1         | 85...265 VAC mains supply                 |
| V2         | 24 VDC (18...36 VDC)                      |
| V9         | Custom supply (e.g. self-switching range) |

## Communication & Outputs

| Order code | Description / options                  |
|------------|----------------------------------------|
| O1         | Pulse + Modbus RS-485                  |
| O2         | 4–20 mA + pulse + Modbus RS-485        |
| O5         | HART + 4–20 mA + pulse + Modbus RS-485 |

## Cable Entry

| Order code | Description / options      |
|------------|----------------------------|
| E1         | M20×1.5 female cable entry |
| E9         | Custom cable entry         |

## Mounting Bracket

| Order code | Description / options          |
|------------|--------------------------------|
| B0         | Without mounting bracket       |
| B2         | With mounting bracket supplied |

## Explosion Protection

| Order code | Description / options |
|------------|-----------------------|
| XG         | IECEx approval        |
| XN         | No Approvals          |

## IP Rating

| Order code | Description / options     |
|------------|---------------------------|
| I5         | IP65 enclosure (standard) |
| I7         | IP67 enclosure            |

## Flow Direction

| Order code | Description / options                     |
|------------|-------------------------------------------|
| FD1        | Standard flow direction as per body arrow |
| FD2        | Mechanically reversed flow direction      |

## Ambient temperature

| Order code | Description / options                  |
|------------|----------------------------------------|
| TA1        | –40...+60 °C (default)                 |
| TA3        | Custom ambient temperature requirement |

## Documentation

| Order code | Description / options |
|------------|-----------------------|
| CE         | CE Certificate        |
| UK         | UKCA Certificate      |
| RO         | RoHS                  |

## Measurement principle

The QMASS 5503 operates according to the Coriolis principle. During operation, the internal measuring tube is driven into a controlled vibration. When there is no flow, the upstream and downstream sections of the tube vibrate in phase. As mass flows through the vibrating tube, Coriolis forces act on the fluid and cause a measurable phase shift between these sections.

Pickoff sensors mounted on the tube detect this phase difference, which is proportional to mass flowrate. The transmitter processes the signals and outputs the mass flow value. At the same time, the natural vibration frequency of the tube is monitored and used to determine the flowing density, while an integrated temperature sensor provides process temperature. From these primary variables, the instrument can calculate additional quantities, such as volume flow and totalised mass or volume, according to user configuration. The operating principle is described in more detail in the introductory section of the product manual.

## Design and measuring system

The QMASS 5503 measuring system consists of:

- An intrinsically safe Coriolis sensor with a 3 mm U-shaped 316L stainless-steel tube and DN15 flanged process connections.
- A combined intrinsically safe / flameproof transmitter with OLED display and optical keys.
- An explosion-proof shielded cable linking the two when you choose the remote variant.

Figure 1 illustrates our two basic mechanical layouts: remote (sensor and transmitter separate) and compact (transmitter mounted directly on the sensor). In both cases the process connections carry the weight of the sensor; no additional external support is normally required, and the sensor itself must not be used to support pipework.

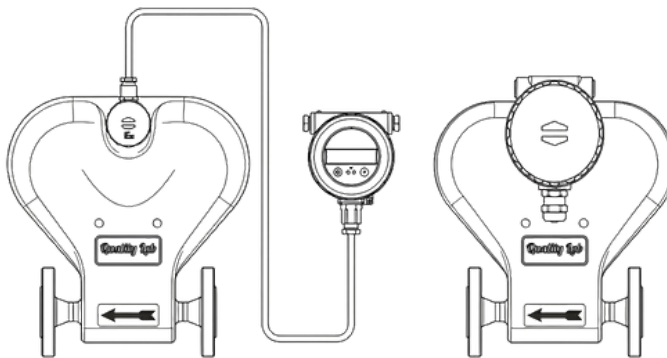


Figure 1

The transmitter housing includes:

- A circular OLED display and three touch-free optical keys (SET, STATUS, SELECT) for configuration and operation (see Figure 2 and Figure 3).

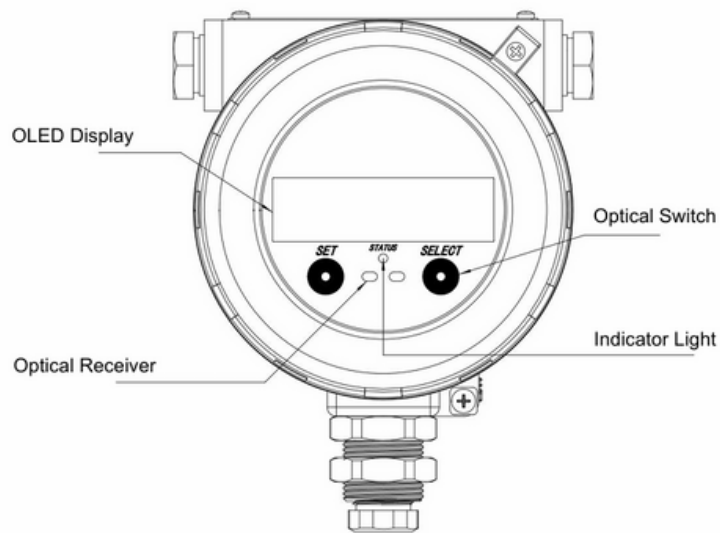


Figure 2

| Interface 1       |       |              |    | Interface 2 |  | Interface 2    |  |
|-------------------|-------|--------------|----|-------------|--|----------------|--|
| Process Variables |       |              |    | Mass Total  |  | M FlowRate     |  |
| TOTAL:            |       | 0.000 kg     |    | 0.000       |  | 0.000          |  |
| FLOW:             |       | 0.000 kg/min |    |             |  |                |  |
| D: 0.000          | g/cm3 | T: 0.00      | °C | M TOTAL: kg |  | M FLOW: kg/min |  |

Figure 3

- Cable entries for AC or DC power, 4...20 mA, pulse, RS-485 and grounding.
- External M4 grounding lugs on transmitter and junction box for reliable earthing (see Figure 3).

Ingress protection options up to IP67 are available, and ambient temperature options extend down to -40 °C and up to +60 °C, depending on the version you select.

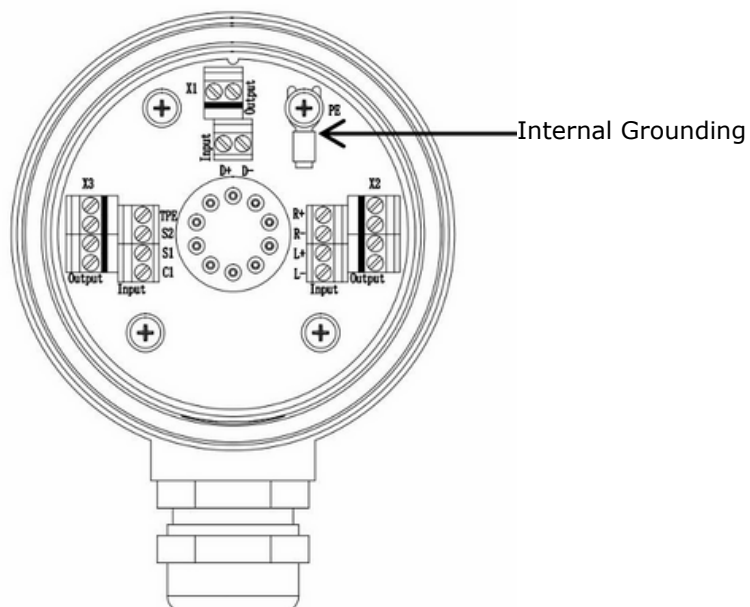


Figure 4

## Performance characteristics

QMASS 5503 measures mass flow directly, then derives volume flow and volume totals using either real-time density or a fixed density value that you enter. This is particularly useful for gas applications, where you can enter the standard density of the gas and obtain standard volume totals while the display still shows “m<sup>3</sup>”.

Every meter is calibrated on our own flow rigs in a dedicated calibration laboratory with an uncertainty of 0.05%. Each instrument carries a factory calibration factor, and there is a separate user calibration factor that you can adjust via the transmitter interface or configuration software when you replace a transmitter or when you have verified a difference between meter reading and a reference. Together with the small zero stability and no-moving-parts design, this gives a very stable and repeatable low-flow performance.

## Operating and installation conditions

QMASS 5503 is certified for use in explosive gas atmospheres in Zones 1 and 2, gas group IIC. Installation must follow the relevant rules for electrical equipment in explosive environments. We supply the sensor and transmitter as a matched pair; always ensure that the serial numbers on the sensor and transmitter match before putting the meter into service.

To achieve reliable measurement:

- Install the meter so that the tube remains completely filled during operation. For liquids and slurries, a low point in the line is preferred; for gases, a high point is often better. Figure 5 shows the preferred orientations for gas, liquid and slurry.

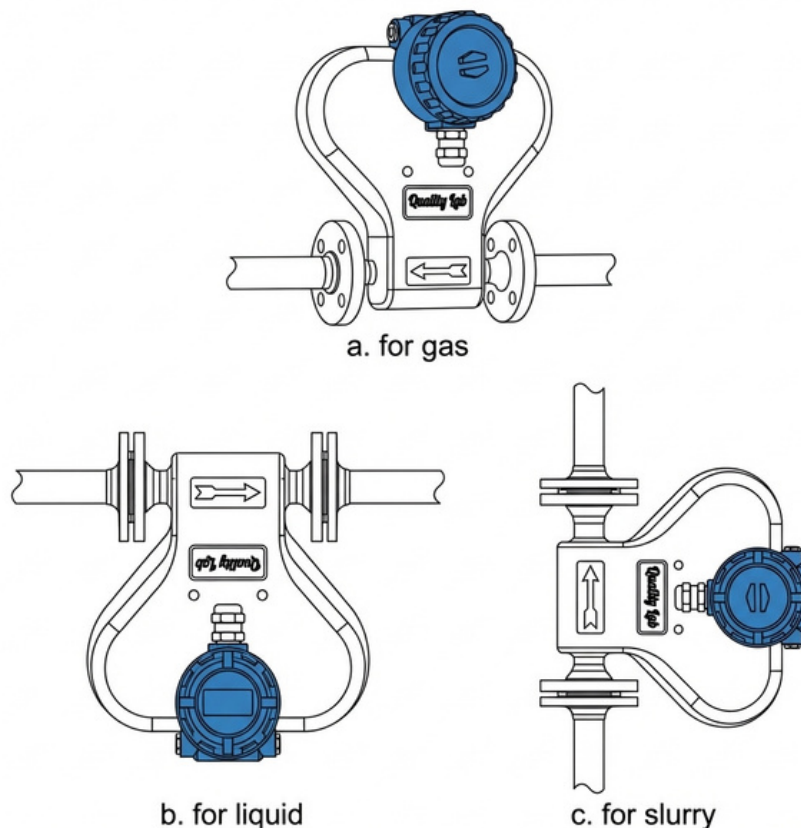


Figure 5

- Keep the meter away from direct sunlight, rain, corrosive liquids, strong vibration and sudden temperature changes.
- Respect our specified limits for external magnetic fields and do not place the sensor close to strong magnets.
- Ensure upstream piping is clean and free of welding debris or foreign objects.
- Align the pipework independently and then bolt the meter in; do not use the sensor to pull misaligned flanges together.
- Minimise torque and bending loads on the process connections, and avoid rigid contact between the sensor casing and nearby structures.

The flow direction arrow on the sensor body must match the desired forward flow direction. In the transmitter you can then choose whether to count only forward flow, only reverse flow, the absolute sum of both, or a bidirectional total that increases in one direction and decreases in the other.

The transmitter and junction box have cover grooves for optional sealing devices. When sealing is fitted, the enclosures cannot be opened without tools, which protects the Ex integrity; see Figure 6.

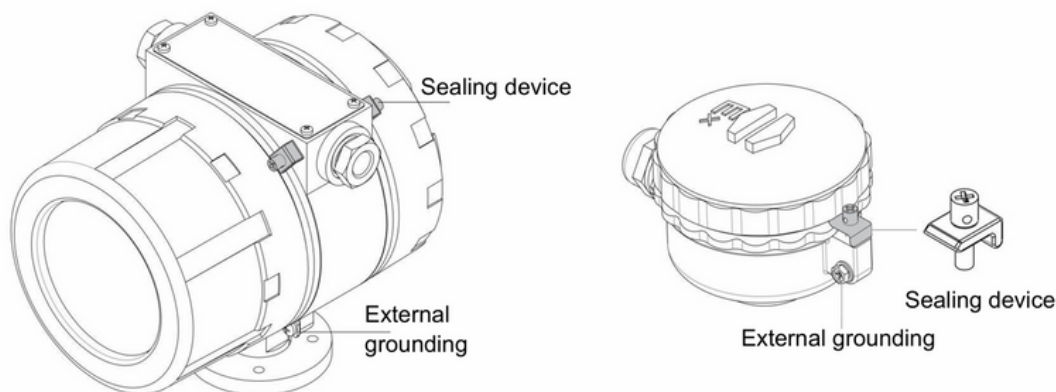


Figure 6

To reduce the risk of condensation, avoid mounting the transmitter or junction box with cable entries pointing upwards. A clamp allows you to rotate the junction box by 180° where access requires it.

Ambient operating conditions for the transmitter include temperature ranges down to -30 °C or -40 °C and up to +60 °C (depending on variant), relative humidity up to 95% non-condensing and atmospheric pressure from 86 to 106 kPa, as given in the transmitter specifications.

## Process conditions and medium limitations

- Maximum working pressure for QMASS 5503 is 40 Bar; your process and flange rating must remain within this value.
- Sensor variants cover several process temperature ranges, including cryogenic (-200...+60 °C), low-temperature (-70...+160 °C) and higher-temperature options up to -40...+300 °C. Select a variant that matches your actual process temperature range.
- The Coriolis design is suitable for common process liquids, non-Newtonian fluids, slurries, suspensions and gases within these pressure and temperature limits.
- A configurable flow cut-off is available for both mass and volume. Below this user-set threshold the meter will not count, preventing slow drift at zero and eliminating unwanted totals when the pipe is static.
- For gas measurement where you want standard volume, you can enter a fixed density value (for example, the standard density of natural gas). The meter then uses this value to convert the measured mass flow into a standard volume, while the display continues to show "m³".

## Grounding and potential equalization

Good grounding is essential for both measurement stability and explosion protection.

- The sensor is normally grounded through the process piping. In addition, we provide M4 external grounding screws on the transmitter housing and on the junction box; see Figure 6.
- Inside the sensor junction box, the terminal board has a dedicated internal grounding point, where the shield of the sensor cable is connected; see Figure 4.
- The multi-core shielded cable between sensor and transmitter uses colour-matched cores at both ends to simplify correct wiring of drive coils, pick-offs, temperature sensor and shielding.
- During installation, connect all grounding points to the plant earth in line with your site standards. During maintenance, periodically check that all external and internal grounding screws are tight and free of corrosion.
- On non-conductive piping or where additional equipotential bonding is required, ensure that the flanges and meter body are reliably connected to earth, consistent with the Ex-protection requirements.

## Electrical connections, outputs and communication

You can power QMASS 5503 from either AC or DC supplies:

- AC supply: 85...265 VAC (L, N, PE terminals)
- DC supply: 12...24 VDC (V+ and V- terminals)

We also offer supply variants that accept both a defined DC range and a high-voltage AC range automatically. Typical DC and AC wiring examples are shown in Figure 7.

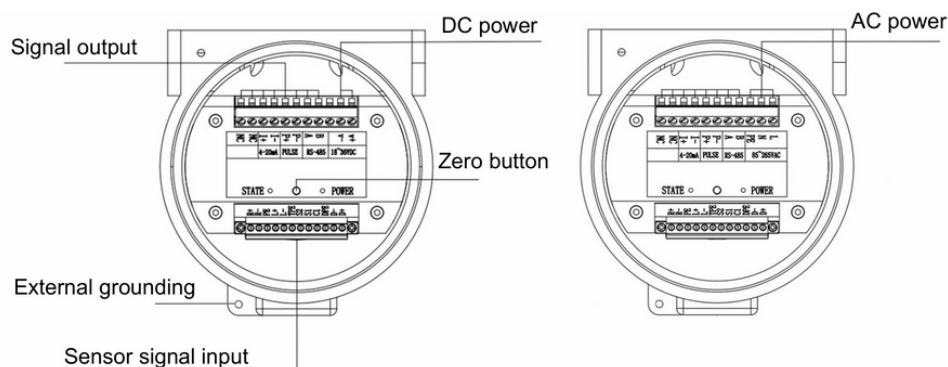


Figure 7

Between sensor and transmitter, a shielded multi-core cable carries all drive, pick-off, temperature and grounding signals. The manual provides full terminal and colour coding for both ends, so you can verify every connection. The maximum cable cross-section and a maximum cable length of 300 m are defined to preserve signal integrity and intrinsic safety. Unused cable entries must always be sealed using suitable Ex-approved plugs.

QMASS 5503 supports a wide range of outputs:

- 4...20 mA analogue output (active by default)
  - Assignable to mass flow, density or temperature.
  - Configurable upper and lower range limits.
  - Damping options and a fixed-current test mode to simplify loop checking.
  - Typical wiring is shown in Figure 8.

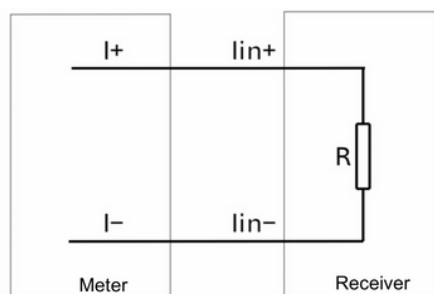


Figure 8

- Pulse / frequency output
  - Passive output, configurable for mass or volume.
  - Adjustable pulse equivalent so you can balance receiver resolution and maximum counting frequency.
  - Max. pulse frequency setting and a fixed-frequency test mode are included to verify receiver performance.
  - Pulse wiring examples are shown in Figure 9

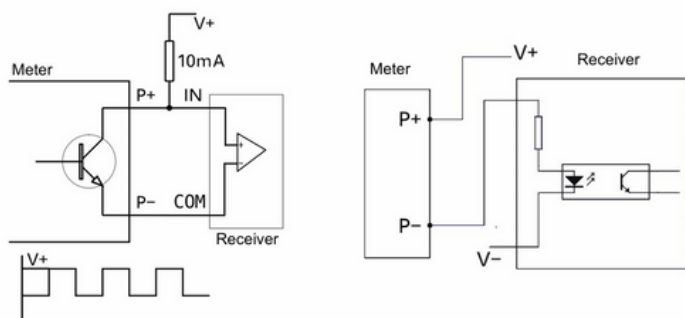


Figure 9

- Digital communication
  - Modbus RS-485 interface with configurable address, baud rate, parity, stop bits and float format.
  - HART communication available as an option on the 4...20 mA loop in specific output configurations.

Output configurations in our ordering structure combine these functions in different ways, for example:

- Pulse + Modbus RS-485
- 4...20 mA + pulse + Modbus RS-485
- Dual 4...20 mA + pulse
- 4...20 mA + pulse + HART

PC-based configuration is available using a USB-to-RS-485 converter. Connect A+ to A+, B- to B- and GND to GND, select the correct COM port and then connect from the software. From there you can access the same output, communication and meter-setup menus as on the local display.

For batching duties, QMASS 5503 can be combined with our explosion-protected batch controller. The controller runs on 24 VDC or 220 VAC and provides relay outputs for valve and pump control, allowing you to build a complete batching station around the flowmeter.

The following tables provide comprehensive definitions for the terminal connections and wiring configurations of the device. Table 1 outlines the general terminal definitions, detailing the function of each connection point. Subsequent tables, Table 2 and Table 3, offer specific wiring definitions for the transmitter and sensor ends, respectively, including color codes and corresponding functions to ensure accurate and reliable installation.

Table 1 - Terminal Definitions

| Terminal   | Definition                          |
|------------|-------------------------------------|
| A(+), B(-) | RS-485                              |
| I+, I-     | HART/ 4-20mA (optional)             |
| P+, P-     | Pulse                               |
| NC         | Empty, reserved for future function |
| L, N, PE   | AC power                            |
| V+, V-     | DC power                            |

Table 2 - Transmitter Terminal Definitions

| Code     | R+                      | R-     | PE             | L+                     | L-     | TPE                  | S2              | S1    | C1     | DPE            | D-  | D+   |
|----------|-------------------------|--------|----------------|------------------------|--------|----------------------|-----------------|-------|--------|----------------|-----|------|
| Color    | White                   | Yellow | Black (Shield) | Gray                   | Purple | Transparent (Shield) | Brown           | Green | Orange | Black (Shield) | Red | Blue |
| Function | Right pickoff detection |        |                | Left pickoff detection |        |                      | Temp. detection |       |        | Coil Drive     |     |      |

Table 3 - Sensor Terminal Definitions

| Code     | R+                      | R-     | L+                     | L-     | TPE                  | S2              | S1    | C1     | D-         | D+   | PE             |
|----------|-------------------------|--------|------------------------|--------|----------------------|-----------------|-------|--------|------------|------|----------------|
| Color    | White                   | Yellow | Grey                   | Purple | Transparent (shield) | Brown           | Green | Yellow | Red        | Blue | Black (shield) |
| Function | Right pickoff detection |        | Left pickoff detection |        |                      | Temp. detection |       |        | Coil drive |      | Grounding      |

## Diagnostics and verification functions

QMASS 5503 includes integrated diagnostics to help you identify issues quickly:

- The transmitter displays error codes at the top of the screen if it detects a problem, such as a sensor error, temperature sensor out-of-range, zero-calibration failure or transmitter initialisation.
- A front-panel status indicator shows green in normal operation and red when any error is active.
- In the configuration software, a dedicated status screen gives you the same information remotely.

Tables 4 and 5 show resistance and voltage ranges for all sensor terminals (left and right pick-off coils, drive coil and temperature elements). With a simple multimeter you can confirm whether the sensor is within these ranges, which greatly speeds up troubleshooting. The left and right coil values should be close to each other; if not, the sensor may be damaged.

Table 4 - Resistance of the Sensor Terminal

| Name       | Cable color    | Terminal | Normal value ( $\Omega$ ) |
|------------|----------------|----------|---------------------------|
| Left coil  | Grey & purple  | L-, L+   | 70~200                    |
| Right coil | Yellow & white | R-, R+   | 70~200                    |
| Drive coil | Red & blue     | D-, D+   | 10~200                    |
| Temp. 1    | Green & black  | S1, S2   | 100-110                   |
| Temp. 2    | Orange & black | C1, TPE  | 100-110                   |

Table 5 - Voltage of the Sensor Terminal

| Name       | Cable color    | Terminal | Normal value (V) |
|------------|----------------|----------|------------------|
| Left coil  | Grey & purple  | M-, L+   | 0.1~0.35         |
| Right coil | Yellow & white | R-, R+   | 0.1~0.35         |
| Drive coil | Red & blue     | D-, D+   | 0.3~5            |

Several functions support commissioning, adjustment and verification:

- Zero calibration – guided procedure via the transmitter or software. You simply warm up the meter, stabilise process temperature, ensure the sensor is fully filled and at zero flow, then run the zero calibration. The status LED flashes green while the procedure is active.
- Density calibration and density cut-off – dedicated menu items for fine-tuning density performance when justified, including low and high density settings and calibration times.
- Flow cut-off – independent cut-offs for mass and volume to suppress residual counts when the flow is effectively zero.
- Fixed-frequency pulse test and fixed-current test – simulation of stable pulse or current outputs to check the receiving instruments without running the process.
- Parameter backup and restore – allows you to store a complete configuration set in the transmitter and restore it after service or replacement.

The optical keys on the front panel are operated by holding a finger a short distance from the glass. Short and long activations are used to navigate menus, change parameters, reset totals and return to the main screen. Figure 2 and 3 show the key locations and example display layouts.

### Certifications and Approvals

QMASS 5503 is designed and built to recognised standards for Coriolis mass flowmeters and explosion-protected equipment.

- The sensor uses an intrinsically safe design suitable for gas group IIC.
- The transmitter uses a flameproof design with intrinsically safe circuits for the sensor connection.
- Typical markings include Ex II 2G with temperature classes from T6 to T1, depending on process and ambient conditions, and the associated EN/IEC 60079 standards are listed in the product manual.

The range carries IECEx and CE conformity, and we hold dedicated certificates for explosion-proof performance, functional safety (SIL), production approval and metrology. Our manufacturing facilities operate under ISO 9001 quality management, ISO 14001 environmental management and ISO 45001 occupational health and safety management systems.

### **Device versions and configuration options**

QMASS 5503 is the smallest member of our Coriolis mass flowmeter family. The range extends through multiple nominal diameters and flow capacities, up to large line sizes handling hundreds of thousands of kilograms per hour. All sizes share the same basic measuring principle, transmitter concept and configuration philosophy, which makes it easy to standardise across a plant.

For QMASS 5503 specifically:

- Nominal diameter: 3 mm
- End connection: DN15 flange
- Tube and splitter material: 316L stainless steel
- Maximum working pressure: 40 Bar
- Process temperature options: from cryogenic (-200...+60 °C) through -70...+160 °C and -40...+200 °C up to high-temperature (-40...+300 °C) variants
- Ambient temperature options: down to -40 °C and up to +60 °C
- Ingress protection: IP65 or IP67, depending on the configuration code

Across the broader range, you can choose:

- Different pressure ratings (for example, 40 Bar, 70 Bar, 100 Bar and 250 Bar, size-dependent).
- Alternative wetted materials such as Hastelloy C-276 for enhanced corrosion resistance on selected sizes.
- Various process connections (flanged, threaded nut and custom solutions).
- Compact or remote transmitter installation, with optional mounting brackets and extra cable protection (hose, bellows or stainless-steel coverings on larger sizes).
- Output and communication combinations including pulse, Modbus RS-485, 4...20 mA (single or dual) and HART..

On the functional side, every meter offers:

- Mass and volume totals plus a separate inventory total.
- Flexible flow-direction handling (forward only, reverse only, absolute value or bidirectional counting).
- A wide selection of engineering units for mass, volume, flow, temperature and density.
- Multi-language display options (Chinese, English, Russian, Spanish and Portuguese).
- Customisable display layout (mass, volume or both on the main screen) and adjustable screen timeout.

## Order Guide

| Segment                   | Order code        | Options                                                                                  |
|---------------------------|-------------------|------------------------------------------------------------------------------------------|
| Product family            | QMASS             | QMASS Coriolis mass flowmeters                                                           |
| Sensor model / line size  | 5503              | DN3 bent-tube Coriolis sensor                                                            |
| Design pressure / MWP     | P2 / P9           | P2 = 40 Bar standard; P9 = custom design pressure                                        |
| Medium temperature class  | T1 / T4           | T1 = -70...+160 °C; T4 = -200...+60 °C                                                   |
| Mass-flow accuracy grade  | A1 / A2 / A3 / A5 | ±0.1 / ±0.15 / ±0.2 / ±0.5 % of rate                                                     |
| Process connection        | C2 / C9           | C2 = DN15 flanged; C9 = custom connection                                                |
| Wetted material           | W1 / W9           | W1 = 316L stainless steel; W9 = custom material                                          |
| Transmitter type          | TR1               | TR1 = CF1 field transmitter                                                              |
| Display                   | D0 / D1           | D0 = no local display; D1 = with local display                                           |
| Power supply              | V1 / V2 / V9      | V1 = 85...265 VAC; V2 = 24 VDC; V9 = custom supply                                       |
| Communication & outputs   | O1 / O2 / O5      | O1 = pulse + Modbus; O2 = 4–20 mA + pulse + Modbus; O5 = HART + 4–20 mA + pulse + Modbus |
| Cable entry               | E1 / E9           | E1 = M20×1.5; E9 = custom                                                                |
| Mounting bracket          | B0 / B2           | B0 = without bracket; B2 = with bracket                                                  |
| Transmitter installation  | I1 / I2           | I1 = remote transmitter; I2 = compact mounting                                           |
| Explosion protection      | XG                | XG = IECEx                                                                               |
| Ingress protection        | I5 / I7           | I5 = IP65; I7 = IP67                                                                     |
| Flow direction            | FD1 / FD2         | FD1 = default arrow; FD2 = reversed flow direction                                       |
| Ambient temperature class | TA1 / TA3         | TA1 = -40...+60 °C default; TA3 = custom ambient                                         |
| Documentation             | CE/UK/RO          | CE = CE cert; UK= UKCA Cert; RO=RoHS                                                     |

**Ordering Example** DN3 bent-tube Coriolis, 40 BAR, -70...+160 °C, ±0.2 % accuracy, DN15 flange, 316L tube, CF1 transmitter with display, 24 VDC, 4–20 mA + pulse + Modbus, M20×1.5 cable entry, bracket, remote mounting, IECEx, IP67, default flow direction, -40...+60 °C ambient, CE.

| Product family | Sensor model / line size | Design pressure / MWP | Medium temperature class | Mass-flow accuracy grade | Process connection | Wetted material | Transmitter type | Display | Power supply | Communication & outputs | Cable entry | Mounting bracket | Transmitter installation | Explosion protection | Ingress protection | Flow direction | Ambient temperature class | Documentation |
|----------------|--------------------------|-----------------------|--------------------------|--------------------------|--------------------|-----------------|------------------|---------|--------------|-------------------------|-------------|------------------|--------------------------|----------------------|--------------------|----------------|---------------------------|---------------|
| QMASS          | 5503                     | P2                    | T1                       | A3                       | C2                 | W1              | TR1              | D1      | V2           | O2                      | E1          | B2               | I1                       | XG                   | I7                 | FD1            | TA1                       | CE            |

### Notes

Ensure media compatibility with wetted parts.

