

Specifications

Specifications (for models FMR504AW and FMR504AR)

| Item | Description | |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| | FMR504AW (with pre-amplifier) | FMR504AR (with terminal box) |
| Compatible converter | Model EFM504 AW converter | Model EFM504 AU converter |
| Sensor power supply | Supplied via the converter | |
| Ambient temperature range | -10°C to 50°C | |
| Measured media | Tap water: temperature 0°C to 50°C (non-freezing) | |
| Measuring range | 0-0.3 m/s -0-5.0 m/s Refer to table 1 for the flow range | |
| Max. pressure capacity | 1.0 MPa | |
| Nominal diameter | 100-1000 mm | |
| Pipe length (straight) required for sensor installation | 1. Upstream 10 D 2. Downstream 5 D 3. 50 D and longer in the upstream to accept additional pump, valve, or T joint. (D: pipe diameter) | |
| Measurement accuracy | +/-1% of span (varies depending on the span flow, diameter, or calibration method) (The value obtained from the sensor calibrated using a wet calibrator of the company.) | |
| Measurement sensitivity | +/- 3 mm/s | |
| Output | Analog output: 4-20 mADC (damping: 1-100 s) Total flow pulse output: transistor contact (open collector, no-voltage) | |
| Multiple range | Automatic/remote range switching (remote range switching is optional) Number of ranges: 4 for forward, 4 for reverse | |
| Water resistibility | Sensor: JIS C 0920 IP67 (immersion proof type) Converter: JIS C 0920 IP66 (water-proof type) | |
| Power supply | 100 /110 VAC, 50/60 Hz, (18 VA) 24 VDC, (10 W) | |
| Weight | Sensor: approx. 10 kg Converter: approx. 6 kg | Sensor: approx. 9 kg Converter: approx. 6 kg |
| Fittings | Attachment for the corporation stop with saddle (coupling G2.1/2) or flange JIS G 3443-2 F12 80A (WDF8) or flange JIS B 2220 10K 50A (J10F5) | |
| Cable connecting the sensor and converter | Commercially available cable Two-core CVV-S cable 2 mm ² 1000 m max. | Signal: X-3CSD cable for signal Excitation: X-2CD cable for excitation 300 m max. |

※If submersible type (IP68) specifications is required, please contact us.

Table 1 Flow Measuring range

| Diameter (mm) | Flow measuring range (m ³ /h) | | | |
|---------------|------------------------------------------|---------------|---------------|---------------|
| | Approx. 0.3 m/s | Approx. 1 m/s | Approx. 1 m/s | Approx. 5 m/s |
| 100 | 0- 9.3 ~ 0- | 31 | 0- 31 ~ 0- | 155 |
| 125 | 0- 14.4 ~ 0- | 48 | 0- 48 ~ 0- | 240 |
| 150 | 0- 21.0 ~ 0- | 70 | 0- 70 ~ 0- | 350 |
| 200 | 0- 33.9 ~ 0- | 113 | 0- 113 ~ 0- | 565 |
| 250 | 0- 53.0 ~ 0- | 177 | 0- 177 ~ 0- | 885 |
| 300 | 0- 76.3 ~ 0- | 254 | 0- 254 ~ 0- | 1,270 |
| 350 | 0-104 ~ 0- | 346 | 0- 346 ~ 0- | 1,730 |
| 400 | 0-136 ~ 0- | 452 | 0- 452 ~ 0- | 2,260 |
| 450 | 0-172 ~ 0- | 573 | 0- 573 ~ 0- | 2,865 |
| 500 | 0-212 ~ 0- | 70 | 0- 707 ~ 0- | 3,535 |
| 600 | 0-305 ~ 0- | 1,020 | 0-1,020 ~ 0- | 5,100 |
| 700 | 0-416 ~ 0- | 1,390 | 0-1,390 ~ 0- | 6,950 |
| 800 | 0-543 ~ 0- | 1,810 | 0-1,810 ~ 0- | 9,050 |
| 900 | 0-687 ~ 0- | 2,290 | 0-2,290 ~ 0- | 11,450 |
| 1,000 | 0-848 ~ 0- | 2,830 | 0-2,830 ~ 0- | 14,150 |

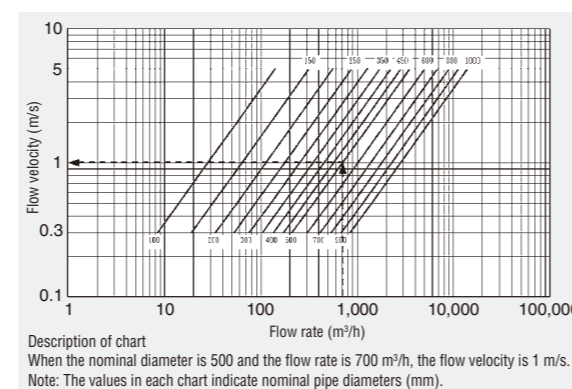


Figure 1 Flow rate vs. flow velocity chart

Notice: For proper operation, follow the instruction manual when using the instrument.

Specifications in this catalog are subject to change with or without notice, as Hitachi High-Tech Solutions Corporation continues to develop the latest technologies and products for our customers.

Hitachi High-Tech Solutions Corporation

<http://www.hitachi-hightech.com/hsl/>

■ Instruments & Control Systems Sales Div.
Harumi Triton Square Office Tower X
1-8-10, Harumi, Chuo-ku, Tokyo, 104-6031 Japan
Tel: +81-3-6758-2092 FAX: +81-3-5859-5764

■ Mito Manufacturing Div.
500, Miyu-cho, Mito-shi, Ibaraki-ken 319-0316 Japan
Tel: +81-29-257-5100 FAX: +81-29-257-5120



Model FMR504A

Hitachi Insertion Electromagnetic Flowmeter



The FMR504A electromagnetic flowmeter is ideal for measuring flow velocity and flow rate in water pipelines—it eliminates the total cost, including the construction cost.

Feature 1 Construction can be carried out without interrupting the water service.

- Construction can be carried out without interrupting the water service by fitting a commercially available corporation stop with saddle. (The corporation stop with saddle is provided by the contractor.)
- The by-pass piping and other construction costs are eliminated, and the total cost is lower than that conventional electromagnetic flowmeters (flange/wafer type).



Corporation stop with saddle

Feature 2 Meets a wide range of field requirements

- The model FMR504A supports a wide range of pipe diameters from 100 mm to 1000 mm.
- Unlike conventional electromagnetic flowmeters, the larger the pipe diameter, the lower the cost, and the initial cost is reduced. (The request for models supporting pipes with a diameter larger than 1000 mm will be discussed separately.)
- Flow measurement for both forward and reverse flow helps grasping the flow distribution across the pipeline network.
- Water pressure can also be monitored by adding the optional pressure gauge.

Feature 3 Excellent maintainability

- The corporation stop with saddle allows mounting and dismounting the flowmeter without interrupting the water service. The excellent maintainability eliminates maintenance and management tasks.
- The flowmeter is compatible with commercially available cables (model FMR504AW).
- The wet calibration is performed with a user-specified flow rate.



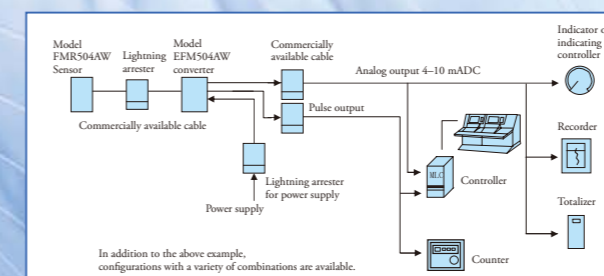
Model FMR504AW sensor



Model EFM504AW converter

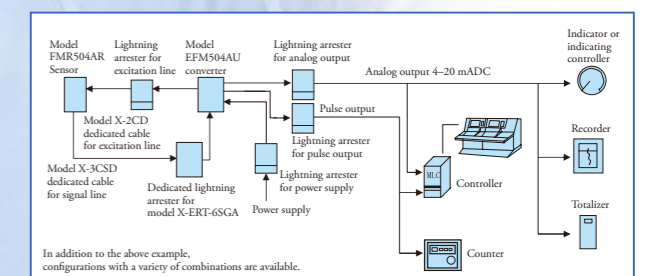
Configuration examples

FMR504AW (with pre-amplifier)



The sensor and converter are connected via a commercially available cable. Select the model FMR504AR flowmeter for installation in an area with the possibility of flooding or vibration.

FMR504AR (with terminal box)

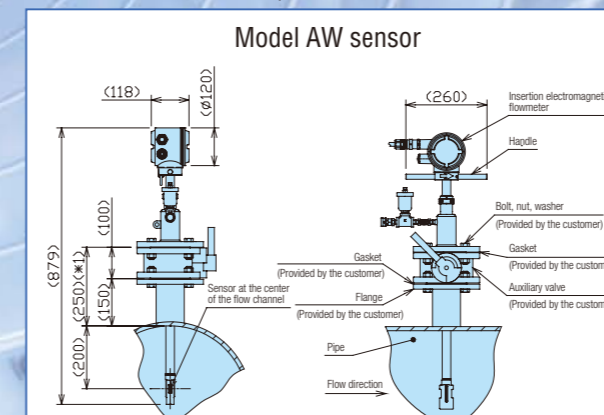


The dedicated cable is required to connect the sensor and converter. Check the required length and order the cable with the flowmeter.

Dimensional drawing

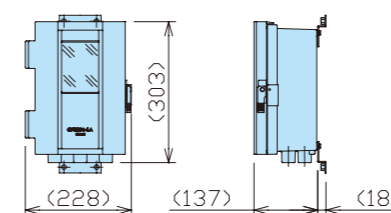
FMR504AW (with pre-amplifier)

(The drawing shows the dimensions for the model AW flange connection type sensor)



(*1) Inner pipe wall - auxiliary valve (including the gasket) Standard height: 250 mm max.

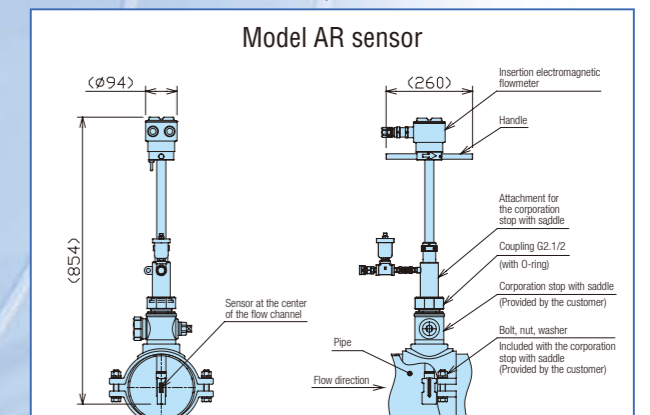
Model AW converter



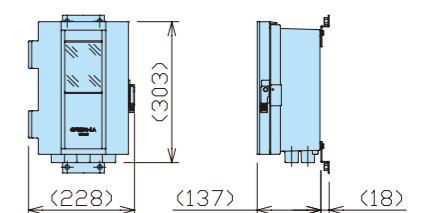
Unit: mm

FMR504AR (with terminal box)

(The drawing shows the dimensions for the model AR sensor installed with a corporation stop with saddle)



Model AU converter



Unit: mm

Example of flowmeter installation in the pipe



1. Secure the corporation stop with saddle on the pipe.



2. Attach a drill.



3. Drill a hole in the pipe (the water service is not interrupted).



4. Install the flowmeter.



5. Loosen the flowmeter setscrew.



6. Insert the flowmeter into the pipe.



7. Check the wiring and operation.

The figures are sample images. Refer to the instruction manual for installation details.

The corporation stop with saddle must be installed by a contractor from the water supplier.