

# Waterpilot® FMX21 Hydrostatic Submersible Level Transmitters


 Part No. [FMX21-FE121DGB10A](#)

Endress+Hauser Waterpilot FMX21 hydrostatic submersible level transmitters provide continuous liquid level measurement by sensing the hydrostatic pressure produced by the height of liquid above the sensor and providing a 4-20 mA output signal compatible with PLCs, panel meters, data loggers, and other electronic equipment. The heavy-duty Waterpilot FMX21 is ideally suited for wastewater applications, offering an easy-to-clean, flush-mounted, process-isolating sensor diaphragm; a rugged 42mm diameter stainless steel housing; and a diaphragm protection cap. The shielded extension cable includes an atmospheric pressure compensation tube with Teflon filter and a tough abrasion-resistant, low-density polyethylene jacket that is UV-resistant. Accessories include a terminal box, suspension clamp, and cable shortener.

## Features

- Ideally suited for wastewater applications
- Durable 316 SS construction for reliable, long life in harsh environments
- Easy-to-clean, flush-mounted, process-isolating sensor diaphragm with protection cap
- Shielded cable with atmospheric pressure compensation tube and Teflon filter
- Pre-calibrated ranges up to 2 bar (66.9 ftWC) to meet the most common waste water submersible level applications
- $\pm 0.2\%$  accuracy
- Environmental protection rating of IP68
- The Waterpilot FMX21 includes FM hazardous location approvals for intrinsically safe applications

## Applications

- Wastewater
- Lift station monitoring
- Liquid level in vented tank
- Landfill leachate monitoring
- Construction by-pass pumping
- Dewatering
- Pump control
- Slurry tank liquid level



Click on the thumbnail or go to <https://www.automationdirect.com/VID-LE-0017> for a short video on Endress+Hauser Waterpilot Hydrostatic Submersible Level Transmitters



## Waterpilot FMX21 Hydrostatic Submersible Level Transmitter Selection

| Model                             | Description                               | Sensing Range                          | Wetted Parts | Output  | Connection          | Shielded/Vented | Price      | Weight (lbs) | Drawing Link        | Vendor Operating Instructions |
|-----------------------------------|-------------------------------------------|----------------------------------------|--------------|---------|---------------------|-----------------|------------|--------------|---------------------|-------------------------------|
| <a href="#">FMX21-FE121DGB10A</a> | Hydrostatic submersible level transmitter | 0 to 0.2 bar (6.7 ft of water column)  | 316L         | 4-20 mA | 10m (32.8 ft) cable | Yes             | \$1,039.00 | 7.3          | <a href="#">PDF</a> | <a href="#">PDF</a>           |
| <a href="#">FMX21-FE121FGB10A</a> |                                           | 0 to 0.4 bar (13.4 ft of water column) |              |         |                     |                 | \$1,039.00 | 7.3          | <a href="#">PDF</a> | <a href="#">PDF</a>           |
| <a href="#">FMX21-FE121GGB10A</a> |                                           | 0 to 0.6 bar (20.1 ft of water column) |              |         |                     |                 | \$1,039.00 | 7.5          | <a href="#">PDF</a> | <a href="#">PDF</a>           |
| <a href="#">FMX21-FE121HGB11A</a> |                                           | 0 to 1 bar (33.5 ft of water column)   |              |         | 20m (65.6 ft) cable |                 | \$1,095.00 | 8.4          | <a href="#">PDF</a> | <a href="#">PDF</a>           |
| <a href="#">FMX21-FE121KGB15A</a> |                                           | 0 to 2 bar (66.9 ft of water column)   |              |         | 30m (98.4 ft) cable |                 | \$1,206.00 | 9.6          | <a href="#">PDF</a> | <a href="#">PDF</a>           |

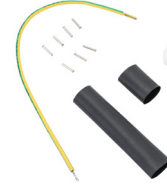
# Waterpilot® FMX21 Hydrostatic Submersible Level Transmitters

| FMX21 Submersible Level Transmitter Specifications |                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Accuracy</b>                                    | $\pm 0.2\%$ (In accordance with IEC 60770)                                                                                                                                                                                                                                                                                                    |
| <b>Long-Term Stability</b>                         | $\leq 0.1\%$ of URL/year<br>$\leq 0.25\%$ of URL/5 years                                                                                                                                                                                                                                                                                      |
| <b>Wetted Materials</b>                            | 316L, PFA, FKM, Al <sub>2</sub> O <sub>3</sub> (Aluminum oxide ceramic), PE                                                                                                                                                                                                                                                                   |
| <b>Process Temp. Range</b>                         | -10 to +70°C (+14 to +158°F)                                                                                                                                                                                                                                                                                                                  |
| <b>Thermal Error</b>                               | Thermal change in the zero output and the output span:<br>0 to 30°C (+32 to 86°F): $< (0.15 + 0.15 \times \text{TD})\%$ of set span<br>-10 to +70°C (+14 to 158°F): $< (0.4 + 0.4 \times \text{TD})\%$ of set span<br>Temperature coefficient (TK) of the zero output and the output span<br>-10 to +70°C (+14 to 158°F): 0.1 % / 10 K of URL |
| <b>Protection Rating</b>                           | IP68                                                                                                                                                                                                                                                                                                                                          |
| <b>Input Voltage</b>                               | 10.5 to 35VDC / 10.5 to 30VDC (hazardous area)                                                                                                                                                                                                                                                                                                |
| <b>Input Current</b>                               | $\leq 23\text{mA}$                                                                                                                                                                                                                                                                                                                            |
| <b>Output</b>                                      | 4 to 20 mA                                                                                                                                                                                                                                                                                                                                    |
| <b>Output Resolution</b>                           | 1 $\mu\text{A}$                                                                                                                                                                                                                                                                                                                               |
| <b>Output Impedance</b>                            | 587 $\Omega$ at 24 VDC                                                                                                                                                                                                                                                                                                                        |
| <b>Mounting</b>                                    | Vertical                                                                                                                                                                                                                                                                                                                                      |
| <b>Circuit Protection</b>                          | Overvoltage protection as per EN 61000-4-5 (500V symmetrical/1000V asymmetrical)                                                                                                                                                                                                                                                              |
| <b>Cable Jacket Material</b>                       | PE (Polyethylene)                                                                                                                                                                                                                                                                                                                             |
| <b>Cable Pull Strength</b>                         | 950N (213.56 lbf) Max<br>Cable extraction force (tensile force required to extract the cable from the probe):<br>$\geq 400\text{ N (89.92 lbf)}$                                                                                                                                                                                              |
| <b>Number of Conductors</b>                        | 2 + 1 drain (shielded cable)                                                                                                                                                                                                                                                                                                                  |
| <b>Conductor Size</b>                              | 0.14 mm <sup>2</sup>                                                                                                                                                                                                                                                                                                                          |
| <b>Vent Tube</b>                                   | Teflon filter: External diameter of 2.5 mm (0.1 in), Internal diameter of 1.5 mm (0.06 in)                                                                                                                                                                                                                                                    |
| <b>Agency Approvals</b>                            | FM, CE                                                                                                                                                                                                                                                                                                                                        |

Note: For Wiring and Installation information refer to the additional Vendor Operating Instruction PDF.

# Waterpilot® Hydrostatic Submersible Level Transmitter Accessories

## Accessories

Part No. [52006152](#)Part No. [52006153](#)Part No. [52006151](#)Part No. [71222671](#)

| Waterpilot Level Transmitter Accessories |                                                                                                                                     |         |              |                     |                     |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------|--------------|---------------------|---------------------|
| Model                                    | Description                                                                                                                         | Price   | Weight (lbs) | Drawing Link        | Vendor Instructions |
| <a href="#">52006152</a>                 | Endress+Hauser terminal box, for use with Endress+Hauser Waterpilot FMX11 and FMX21 hydrostatic submersible level transmitters.     | \$94.00 | 0.6          | <a href="#">PDF</a> | N/A                 |
| <a href="#">52006153</a>                 | Endress+Hauser weight, for use with Endress+Hauser Waterpilot FMX11 hydrostatic submersible level transmitters.                     | \$67.00 | 0.7          | <a href="#">PDF</a> | N/A                 |
| <a href="#">52006151</a>                 | Endress+Hauser suspension clamp, for use with Endress+Hauser Waterpilot FMX11 and FMX21 hydrostatic submersible level transmitters. | \$74.00 | 0.5          | <a href="#">PDF</a> | N/A                 |
| <a href="#">71222671*</a>                | Endress+Hauser cable shortener, for use with Endress+Hauser Waterpilot FMX21 hydrostatic submersible level transmitters.            | \$81.00 | 0.1          | N/A                 | <a href="#">PDF</a> |

\* If the cable is shortened or modified the FMX21 is no longer FM approved. The shortening kit should only be used when FM approval is not required for the device. To maintain FM the additional cable length should be coiled and secured.

- To avoid moisture migration in the pressure compensation tube of the FMX11 and FMX21, the cable must be terminated in a dry room or terminal box. The terminal box accessory is IP66/67 rated and includes a GORE-TEX filter element providing both humidity and climatic protection even if installed outdoors.
- The additional weight accessory for the FMX11 helps prevent sideways movement of the sensor that can result in measuring error, or can make it easier to lower the sensor in a guide tube. The additional weight accessory does not fit the FMX21.
- The suspension clamp accessory provides for easy mounting of the FMX11 or FMX21. Simply secure the sensor cable between the clamping jaws and attach the suspension clamp to an appropriate fastening point.
- The cable shortening kit is used to easily and professionally shorten the FMX21 cable including the conductors and the pressure compensation tube. If the cable is shortened or modified the FMX21 is no longer FM approved. The shortening kit should only be used when FM approval is not required. The cable shortening kit is not suitable for the FMX11. Alternatively any extra cable length can simply be coiled and secured.