OPTIWAVE 7300 C
Radar Level Meter
for distance, level and volume of liquids, pastes and solids

Designed to satisfy better than any other radar

For all applications
- Objects in tank
- Foam
- Agitated surface

Setup-Wizard easier than ever before

Electromagnetic flowmeters
Variable area flowmeters
Mass flowmeters
Ultrasonic flowmeters
Vortex flowmeters
Flow controllers

Level measuring instruments
Pressure and temperature
Heat metering
Communications technology
Switches, counters, displays and recorders
Engineering systems & solutions

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OPTIWAVE works better than any radar ever before

In contrast to earlier radar devices, the new OPTIWAVE with its new components and more advanced design solutions is able to operate over a larger bandwidth. This ensures a sharper resolution and higher accuracy. The higher signal dynamics of OPTIWAVE allow the detection of even the smallest level changes.

OPTIWAVE makes level gauging easier than ever before

Wizard works wonders

Setting up a 2-wire level gauge couldn’t be easier:
Simply fit the gauge to the tank, wire it up and switch it on:

Step 1 – OPTIWAVE tests itself to make sure its electronics are working perfectly.
Step 2 – OPTIWAVE’s Wizard walks you through a simple series of questions to define your tank and the product you want to measure.
(Step 3) – That’s all you need. Your OPTIWAVE is already measuring.

Online help

Not certain what to do? You don’t need a handbook. Simply wait 10 seconds, the help screen will appear and tell you what to do.

Process control

The easy-to-understand DTM screens make process setup, process analysis and also process control easier than with any other device.

Easy viewing
Choice of different screens: (tank illustration, bargraph, signal and reflectivity screen)

Display in 9 languages
Even in Chinese, Japanese and Russian

Objects in tank
Agitators and other objects such as struts, inlets, ladders, have less effect on signal reduction. The better signal is easier to evaluate and the results are more accurate and repeatable.

Foam
The better signal permits much clearer location of the product’s true surface.

Agitated surface
The better signal production and the better PCB board characteristics allow the OPTIWAVE to determine the true level in the tank despite the agitated surface.

Designed to satisfy better than any other radar

Easy navigation
Touch screen with 4-button operation

Same housing for all versions (Ex and non-Ex)

Various antenna types and materials for all applications

2-wire

Special process separator for extreme conditions

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### OPTIWIWAVE 7300 C

#### Input
- **Function**: K-band FMCW radar
- **Parameter**: Level, distance, volume and reflectivity
- **Min. tank height**: 1.5 ft / 0.5 m
- **Max. measuring range**: 131 ft / 40 m
- **Blocking Distance (dead zone)**: Antenna extension length + antenna length + 4" / 0.1 m

#### Output
- **Output signal**: Output 1
- **Accuracy**: 0.05% (rel. 20 mA; 68°F / 20°C)
- **Resolution**: ±2 µA
- **Temperature drift**: Typically 50 ppm/K
- **Error signal**: High: 22 mA; Low: 3.6 mA acc. to NAMUR NE 43
- **Max. Load**: 350 ohm

#### Measuring accuracy
- **Reference conditions**: Temperature +68°F ±9°F / +20°C ±5°C
- **Resolution**: ±0.12" / ±3 mm

#### Application conditions
- **Temperature**: Ambient temperature -40…+175°F / -40…+80°C; EEx i: -40…+140°F / -40…+60°C
- **Flange temperature**: -40…+300°F / -40…+150°C (Ex: refer to relevant device’s approval and temperature class)
- **Thermal shock resistance**: 100°C/Min
- **Vibration resistance**: IE C 68-2-6 and prEN 50178 (10…57Hz: 0.075 mm / 57…150 Hz: 1 g)
- **Dielectric constant**: ≥ 1.8

#### Mechanical data
- **Material**:
  - Housing: Aluminium
  - Wetted parts: Stainless steel (1.4404 / 316L)*; Hastelloy C-22 (2.4602)
  - Process fitting:
    - Gaskets: Viton (-40…+300°F / -40…+150°C); Kalrez 6375 (-5 …+300°F / -20…+150°C)
  - Process connection:
    - Thread: G 1 1/2; 1 1/2 NPT
    - Flange: 1 1/2"…6" (150 lb / 300 lb) / DN 40…DN 150 (PN 40 / PN 16); 10 K (40…100A)

#### Electrical connection
- **2-wire power supply**:
  - Terminals output 1: 24 V DC (14 … 30 V DC)
  - Non-Ex/ EEx i: 24 V DC (20 … 36 V DC)
  - EEx d: 24 V DC (14 … 30 V DC)
  - Cable entry: M20x1.5; 1/2 NPT; G 1/2
  - Terminals: 0.5…1.5 mm²

#### Human machine interface
- **Display**: 9 lines, 160x160 pixels in 8-step greyscale with 4-button keypad
- **Operating languages**: English (UK), German, French, Italian, Spanish, Portuguese, Japanese, Chinese (Mandarin), Russian

#### Approvals
- **Approvals**:
  - Overfill protection: WHG
  - ATEX: ATEX II G/D 1, 1/2, 2 EEx ia IIC T6...T1; ATEX II G/D 1/2, 2 EEx d ia IIC T6...T1
  - FM: Class I Zone 0 AEx d [ia] IIC
  - FM: Class I Zone 2 GR IIC
  - CSA: Class I Zone 0 Ex d [ia] IIC
  - FCC: Part 15 for Horn antenna and only when device is installed within closed metal tanks as indicated in Certification filing (see Installation manual).
Dimensions and weights

**Flange (Antenna 3”/DN 80)**

- Dimensions: 465.3 x 18.3 x 71.5 x 2.8 x 115.3 x 4.5 x 190 x 7.5 x 305.3 x 12 x 125 x 4.9 x 182 x 7.2
- Weight: approx. 24.3 lb / 11 kg

**Antenna 3”/DN 80 with antenna extension**

- Dimensions: 523.2 x 20.6 x 71.5 x 2.8 x 115.3 x 4.5 x 190 x 7.5 x 305.3 x 12 x 125 x 4.9 x 182 x 7.2
- Weight: approx. 26.5 lb / 12 kg

**Flange [Antenna 1 1/2” / 2” (DN 40/50)]**

- Dimensions: 355.3 x 14 x 88.2 x 3.5 x 77.1 x 3 x 190 x 7.5 x 278.2 x 11 x 44.5 x 1.8 x 182 x 7.2
- Weight: approx. 17.6 lb / 8 kg

**Thread**

- Dimensions: 158.5 x 6.2 x 180 x 7.1 x 122 x 4.8
- Weight: approx. 13.2 lb / 6 kg

### Table: Antenna type dimensions

<table>
<thead>
<tr>
<th>Antenna type</th>
<th>c (inch/mm)</th>
<th>b (inch/mm)</th>
<th>a (inch/mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna 1 1/2”</td>
<td>1.5/39</td>
<td>1.5/38.5</td>
<td>13.5/343.8</td>
</tr>
<tr>
<td>Antenna 2”</td>
<td>1.7/43</td>
<td>2/50</td>
<td>14/355.3</td>
</tr>
</tbody>
</table>

**Note:**

- Cable glands are delivered with non-Ex, EEx i and EEx d approved devices. Non-Ex and EEx i fittings are plastic and EEx d fittings are metal. Non-Ex fittings are black and EEx i fittings are blue. The diameter of the outer sheath of the cable must be 0.2…0.5” or 6…12 mm. Cable glands for FM/CSA approved devices must be supplied by the customer.

**Note:**

- Additional antenna extensions of 4.1” / 105 mm length are available.
**OPTIWAVE 7300 C**

**Electrical connection and wiring**

Output 1
4 ... 20 mA/HART
or
3.8 ... 20.5 mA/HART
acc. to NAMUR NE 43

**Non-Ex**

**Explosion Proof (XP) / Ex d**

**Intrinsically Safe (IS) / Ex i**

**Note:** Other options to connect the HHC (Hand Held Communicator) and modem to the HART® loop are available.

**State-of-the-art with PACware**

OPTIWAVE is PACware-ready. Each device is supplied ex-factory with the appropriate DTM. A DTM (Device Type Manager) is a device driver making available the device functionality independent from the FIELDbus protocol and providing a graphical user interface optimized for device operation and configuration. Simple on-screen and intuitive setup procedure for devices without a display, or for setup from the Central Control Room. Summarized setup provides perfect control of initial input, and a guarantee for perfect results.

All features of PACware are fully supported:

- Online device setup
- Displays measured values
- Records measured information during operation
- Shows status of device

Gives stepwise setup with on-screen progress check

Displays summary of setup selection for final supervision
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Overseas Representatives

- Algeria
- Argentina
- Australia
- Austria
- Belgium
- Brazil
- Bulgaria
- Canada
- China
- Chile
- Colombia
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Egypt
- Egypt
- England
- Spain
- Singapore
- South Africa
- Switzerland
- Thailand
- Turkey
- United Kingdom

Other Countries:

- Argentina
- Australia
- Austria
- Belgium
- Brazil
- Bulgaria
- Canada
- China
- Chile
- Colombia
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Egypt
- Egypt
- England
- Spain
- Singapore
- South Africa
- Switzerland
- Thailand
- Turkey
- United Kingdom

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