

AF16-F

Single Channel Absorption Sensor



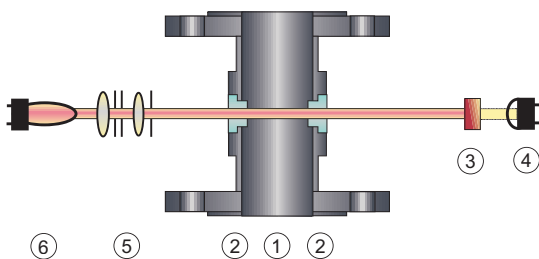
- Inline real-time process monitoring
- Accurate measurement of color or color changes
- High dynamic measuring range
- Extremely low maintenance
- CIP/SIP-compatible
- Broad variety of line sizes, process connections and wetted materials
- NIST-traceable validation accessories

The model AF16-F is a single channel absorption sensor designed for inline applications. It accurately measures color or color changes and can be used in a variety of industrial processes, from sanitary CIP/SIP applications to high pressure, high temperature industrial applications. The AF16-F uses light in the wavelength range from 385 to 1100 nm at selected wavelengths. A precisely defined, constant light beam penetrates the process medium. The attenuation of the light intensity, caused by absorption and/or scattering by dissolved and undissolved substances in the medium, is detected by a hermetically sealed silicon photodiode.

Optical path lengths (OPL) are available from 1 to 1000 mm for process versatility. The AF16-F is typically installed to determine precise color or color changes in a broad range of applications.

The special optical window is made from a single crystal sapphire. This provides superior resistance to all abrasive and corrosive media.

The AF16-F is available with a broad variety of line sizes, process connections and wetted materials and can be adapted easily to the process. NIST-traceable validation accessories assure absolute measurement confidence. Options for hazardous area classification are also available.



Type AF16-F

- | | |
|---------------|-----------------|
| 1 Sensor body | 4 Detector |
| 2 Windows | 5 Optics module |
| 3 Filter | 6 Lamp |

Technical Data

Sensor AF16-F



Material:

sensor body made of stainless steel
SS 316 Ti, 1.4571 (standard)

Special materials:

SS 316 L (1.4435), 1.4539, 1.4462, TFM 4215, Hastelloy® C4, Hastelloy® C22, Titanium, Tantalum, Monel® 400, Inconel® 625, PP, and others on request.

Line size:

¼" to 8", (DN 6 to DN 200)

Process connections:

ASME Flange, DIN Flange, Varivent, JIS Flange, Tri-Clamp, BBS-Clamp, Female Thread NPT, Female Thread DIN ISO 228/1 G, Sanitary Thread (DIN 11851), and others on request.

Gaskets:

Viton®, EPDM (FDA), EPDM (USP Class VI), Kalrez®, Chemraz®, Fluoraz®, Buna (NBR), Silicone, Viton® /FEP (FDA), and others on request.

Windows:

Pyrex®, Sapphire

Optical path length:

1 mm – 1000 mm

Process pressure:

10 mbar to 325 bar, (0.15 psi to 4713 psi), depending on process connection, material and design

Process temperature:

values are only valid with appropriate material of sensor body and gaskets. No icing on sensor!

- permanent: 0 °C to +120 °C, (+32 °F to +248 °F)
- peak (15 min/day): 0 °C to +150 °C, (+32 °F to +302 °F)

Ambient temperature:

- operation: 0 °C to +40 °C, (+32 °F to +104 °F)
(elevated or reduced ambient temperatures may require restrictions to the operating temperatures stated above!)
- transport: -20 °C to +70 °C, (-4 °F to +158 °F)

Air purge:

connectors available as standard

Light source:

incandescent tungsten lamp: 5.0 V DC, 775 mA, typical life span 3 to 5 years

Wavelengths:

specific to application from 385 nm - 1100 nm

Detector:

silicon photodiode, hermetically sealed

Calibration:

basic calibration in CU (concentration units)

Measuring range:

any measuring range between
0 - 0.05 to 3 CU (dependent on the used filter)

Resolution:

< ± 0.05 % of respective measuring range

Repeatability:

< ± 0.5 % of respective measuring range

Linearity:

specific to application, < ± 1 % of respective measuring range

Protection:

all optical parts protected according to IP65

Cable lengths:

standard: 5, 10, 20, 35, 50 m, (16, 33, 66, 115, 164 ft.)
maximum: 250 m, (820 ft.)

VA-plug-protection:

special ultra-shielded cable sets,
optional rigid stainless steel connector

Certificates:

ISO 9001:2000, ATEX, FM, PED, CE, HPO

Use with C4000 converter!

Options



Measuring cells for any application

AF16-HT-F

high temperature model
permanent:
-20 °C to +240 °C, (-4 °F to +464 °F)
peak (15 min/day):
-20 °C to +260 °C, (-4 °F to +500 °F)

Validation adapter

modular adapter with application specific
validation filter for sensor verification

AF16-EX-F and AF16-EX-HT-F

ATEX and FM flameproof versions for safety
and confidence in all hazardous area classification. Approval report:
DMT ATEX E176, FMG J.I. 3013884
(please contact us for separate data sheet)