

AF16-F

1-Channel Absorption



- 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

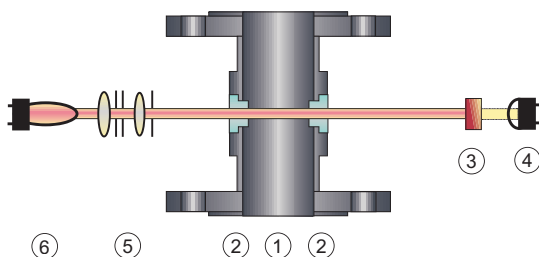
The model AF16-F is a precise, 1-Channel Absorption sensor designed for inline applications. It accurately measures color or color changes and can be used in a variety of industrial processes, from sanitary CIP/SIP applications to high pressure, high temperature industrial applications.

The AF16-F uses light in the wavelength range from 385 to 1000 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 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

Materials:

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, others on request.

Line size:

¼" to 8" (DN 6 to DN 200)

Process connections:

Flange ASME, Flange DIN, Varivent, Flange JIS, Clamp L14 AM7 (Tri-Clamp), BBS-Clamp, Clamp DIN 11864, Female Thread NPT, Female Thread DIN ISO 228/1 G, Sanitary Thread (DIN 11851), others on request.

Window gaskets:

Silicone (FDA), Viton® (FDA), EPDM (FDA, USP Klasse VI), Kalrez® 4079, Viton® /FEP (FDA), Fluoraz® 797, Kalrez® 1050 LF, Kalrez® 6375, Chemraz® 505, Chemraz® 513, Buna® (FDA), Kalrez® 6230 (FDA, USP Class VI), others on request.

Windows:

Pyrex® (Borosilikatglas), Sapphire, Sapphire Biotech

Optical path length:

1 - 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 - 120 °C (32 - 248 °F)
- peak 15 min/day:
0 - 150 °C (32 °F - 302 °F)

Ambient temperature:

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

Airpurge:

connection M5: standard through window ring

Light source:

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

Wavelengths:

specific to application
385 nm, 400 nm, 415 nm, 430 nm, 470 nm, 525 nm, 550 nm,
620 nm, 670 nm, 700 nm, 750 nm, 800 nm or 1000 nm

Detector:

silicon photodiode, hermetically sealed

Calibration:

basic calibration in CU (concentration units)

Measuring range:

any measuring range between
0 - 0.05 to 2.8 CU (dependent on 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

Type of protection:

all optical parts protected according to IP65

Cable connection:

with plastic connector or SS plug protector
length cable set:
2, 3, 5, 10, 15, 20, ..., 100 m (7, 10, 16, 33, 49, 66, ..., 328 ft.)
cable sets length > 100 m (328 ft.) on request

Certificates:

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

Use with C4000 converter!

Options:

EX (EN-D)

Ex-proof version for safety
and confidence in all hazardous area classification accor. ATEX (EN-D)
Approval: DMT ATEX E 176

EX (FM-D)

Ex-proof version for safety
and confidence in all hazardous area classification accor. FM (FM-D)
Approval: FMG J. I. 3013884

HT

high temperature version
permanent:
-30 - 240 °C (-22 - 464 °F)
peak 15 min/day
-30 - 260 °C (-22 - 500 °F)

VA

with Filter-Adapter FH01 (lamp side)
modular adapter for application specific
validation filter for sensor verification

VB

with Filter-Adapter FH03 (detector side)
modular adapter for application specific
validation filter for sensor verification

PV

Airpurge-connection M5:
backside (for Varivent) or through window
ring

optek-Danulat GmbH

Emscherbruchallee 2
45356 Essen,
Germany
Phone: +49-(0)201-63409-0
Fax: +49-(0)201-63409-999
E-Mail: info@optek.de



optek-Danulat, Inc.

N 118 W 18748 Bunsen Drive
Germantown, WI 53022, USA
Phone: +1-262-437-3600
Fax: +1-262-437-3699
Toll free: +1-800-371-4288
E-Mail: info@optek.com



optek-Danulat bv

Tiel, The Netherlands
E-Mail: info@optek.nl



optek-Danulat Pte. Ltd.

Singapore
E-Mail: info@optek.com.sg



optek-Danulat GmbH

St. Petersburg, Russia
E-Mail: info@optek-danulat.ru

