AS16-N

1-Channel Absorption probe (NIR)

inline control



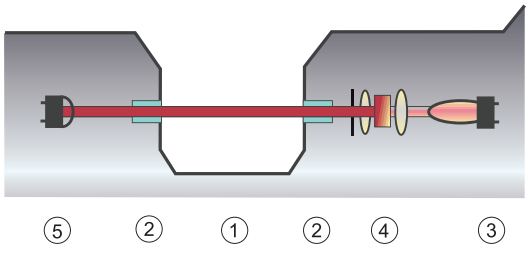
- **Inline real-time process monitoring**
- **Superior sapphire window with no seals, gaps or crevices**
- **Concentration measurement insensitive to color changes**
- **Extremely low maintenance**
- **CIP/SIP-compatible**
- **NIST-traceable validation accessories**

The AS16-N is a high-precision, 1-Channel Absorption probe. The stainless steel probe, equipped with an Ingold-style port, is designed for use in vessels or inline applications.
The AS16-N uses the light in the Near Infrared range (NIR) from 730 to 970 nm. 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, is detected by a hermetically sealed photodiode.

The AS16-N is available in five different optical path lengths (OPL), from 1 to 40 mm. The optical filter on the lamp side adapts the wavelength for specific applications and allows color insensitive concentration measurements in the Near Infrared range.
The AS16-N is available with a 100 mm extended insertion depth for larger vessels (e.g. fermenters).

The seal-less, sapphire window design eliminates crevices and gaps to assure the highest level of sterility, cleanability and sensor integrity. The probe body demonstrates extreme durability and fulfills the CIP/SIP requirements demanded by ultra-sanitary process environments. NIST-traceable validation accessories are available as option for absolute measurement confidence.



Type AS16-N

1 Optical path length (OPL)
2 Sapphire windows
3 Lamp
4 Optics module with filter
5 Detector

Technical Data

AS16-N Probe

Materials (wetted parts):
Stainless steel 1.4435 (SS 316 L) dF < 1 %, BN2
Surface: electro-polished Ra < 0,4 µm
Windows: Sapphire (seal-less)

Material (housing):
Stainless steel 1.4571 (SS 316 Ti)

Port connection:
Thread G1-1/4", ISO 228/1
for port AS25 (similar Ingold-port)
Diameter: 25 mm (D= 25 H7)
O-Ring groove for 30 mm und for 60 mm port length

Port gasket:
O-ring 18,64 x 3,53 mm EPDM (FDA, USP Class VI)

Optical path length (OPL):
1, 5, 10, 20 or 40 mm

Insertion depth maximal:
- version 1: 35 mm + OPL with port length 60 mm
- version 2: 135 mm + OPL with port length 60 mm

Pressure rating:
PN20 (Test pressure PT 25 bar)

Permitted pressure PS:
10 mbar - 20 bar with TS 0 °C / +100 °C

Permitted pressure at elevated temperature:

TS [°C]	< 100	125	150
PS [bar]	20	15	10

Permitted process temperature TS:
- permanent: 0 - 100 °C (32 - 212 °F)
- peak 60 min/day: 0 - 150 °C (32 - 302 °F)

Ambient temperature:
- operation: 0 - 40 °C (32 - 104 °F)
- transportation: -20 - 70 °C (-4 - 158 °F)

Airpurge:
connection M5: standard

Light source:
incandescent tungsten lamp: 5.0 V DC, 775 mA

Wavelength range:
730 - 970 nm

Detector:
silicon photodiode, hermetically sealed

Calibration:
basic calibration in CU (concentration units)

Measuring range:
any measuring range between
0 - 0.05 to 6 CU

Resolution:
< ± 0.05% of respective measuring range

Repeatability:
< ± 0.5% of respective measuring range

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

Cable connection:
with stainless steel connector
length:
2, 3, 5, 10, 15, 20, ... 45 or 50 m
(7, 10, 16, 33, 49, 66, ...148 or 164 ft.)

Weight:
- Probe: approx. 2.0 - 2.5 kg, depending on version
- Cable set: approx. 1.5 kg / 10 m

Type of protection:
IP65

Certificates:
ISO 9001:2000, PED, CE, HP0

Use with C4000 converter!

Options:

VB
with Filter-Adapter FH03
modular adapter for application specific validation filter for sensor verification

Accessories:



- Weld-in port AS25 (0° or 15°)
- Varivent 50.00 adapter port AS25-G60
- Clamp 1.5 inch adapter port AS25-G60
- Clamp 2.0 inch adapter port AS25-G60
- optek T-pieces for pipe DIN 11850 with port AS25-G60, DN 50 - DN 100
- optek T-pieces for pipe OD (BS 4825-1) with port AS25-G60, 2.0" - 4.0"
- Sealing flange AS25

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

1005-2020-0002-02