A-LAS-N Series

➤ A-LAS-N-M18-...-C

- Analog signal (0...+10V or 4...20mA) in connection with an electronic control unit type SPECTRO-1-CONLAS (contrast measurement) or SPECTRO-2-CONLAS (stand-alone operation of the light barrier is not possible, i.e. operation without electronic control unit is not possible)
- Parallel aligned, visible red laser beam (<0.39 mW, 670 nm), **laser class 1**
- Various apertures available
- Measuring range up to 7 mm (depends on aperture used)
- Working range max. 10 m (depends on aperture and cable length)
- Insensitive to outside light due to interference filter
- Compact design, sturdy metal housing, IP67

Design

Product name:

A-LAS-N-M18-(aperture)*-C-(cable length)**
(consists of transmitter and receiver incl. cable with 7-pole connector 712)

Accessories: (cf. page 3)

ABL-M18-3 (Blast air top-part)
ABL-M18-5 (Blast air top-part)
ABL-M18-10 (Blast air top-part)

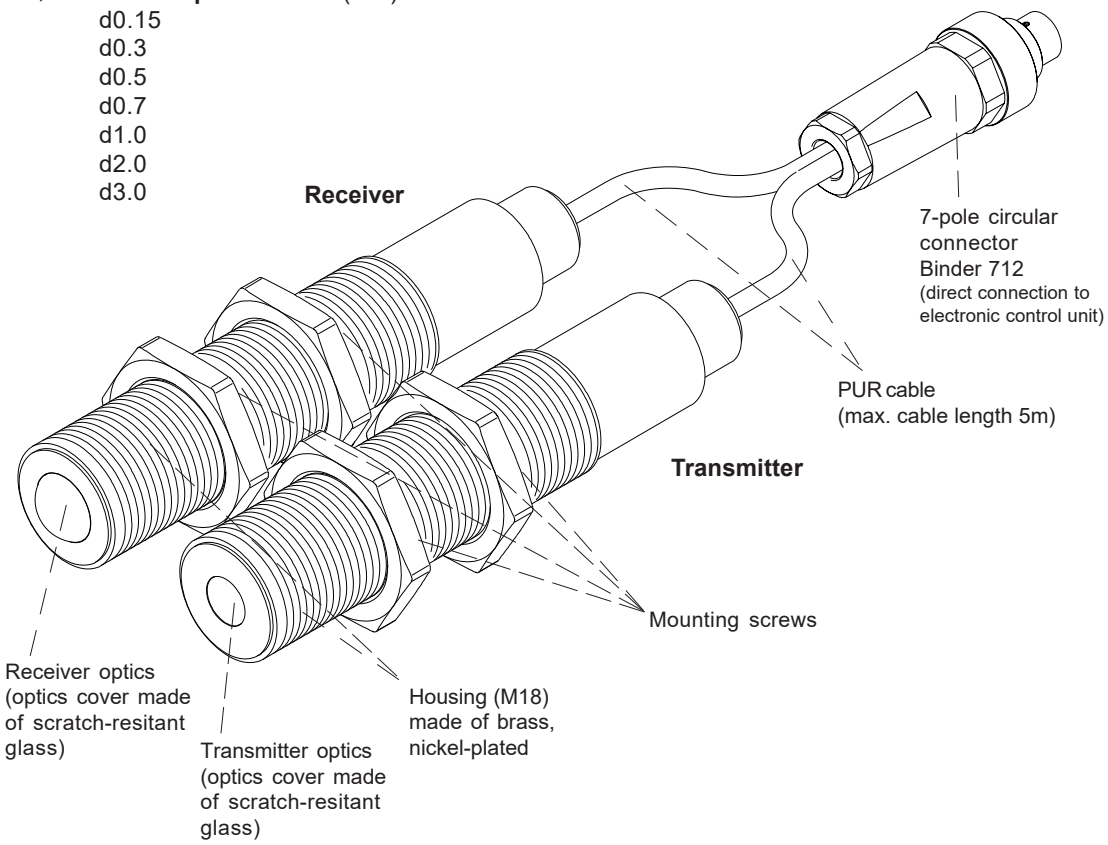
***Available apertures**

Rectangular apertures AxB (mm):

0.3x1	(= 1x0.3)
0.3x1.5	(= 1.5x0.3)
0.3x3	(= 3x0.3)
0.5x1	(= 1x0.5)
0.5x2	(= 2x0.5)
0.5x3	(= 3x0.5)
0.5x4	(= 4x0.5)
0.5x6.5	(= 6.5x0.5)
0.75x2	(= 2x0.75)
0.75x3	(= 3x0.75)
0.8x6	(= 6x0.8)
0.8x6.5	(= 6.5x0.8)
1x2	(= 2x1)
1x3	(= 3x1)
1x4	(= 4x1)
2x1.2	(= 1.2x2)
2x3	(= 3x2)
7x3 (= no aperture)	

Round apertures d... (mm):
d0.15
d0.3
d0.5
d0.7
d1.0
d2.0
d3.0

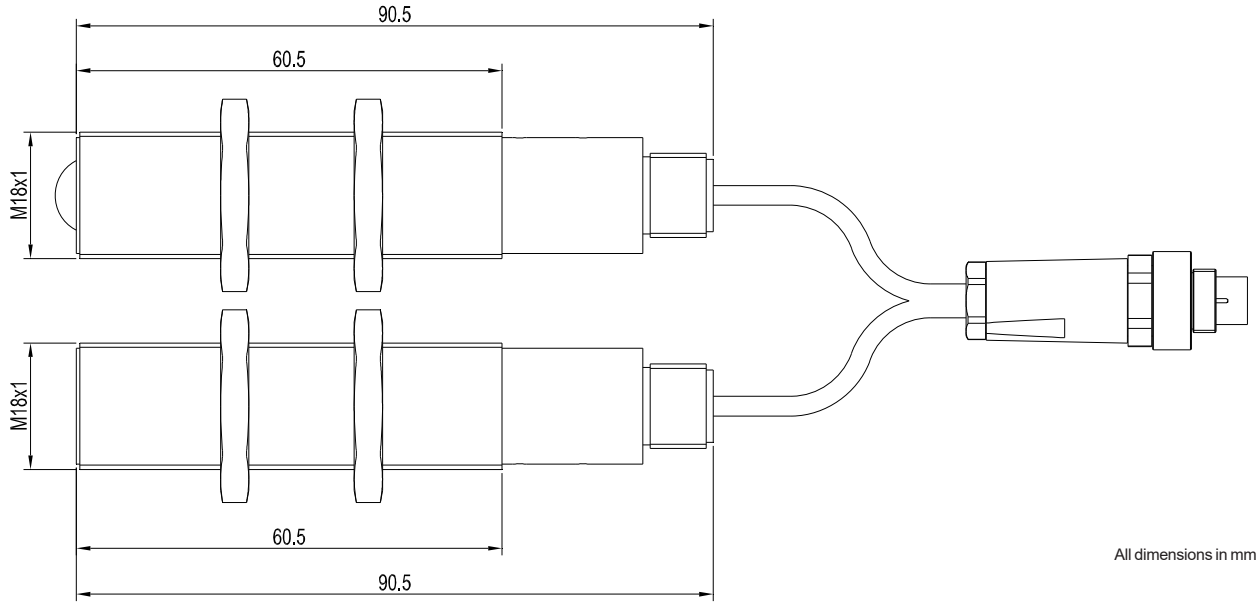
Available cable lengths:
(transmitter and receiver with same cable length)
1 m
2 m
4 m
5 m



Technical Data

Type	**A-LAS-N-M18-...-C**
Shape	Laser light barrier in M18 housing. Various round and rectangular apertures are available.
Laser	Solid-state laser, 670 nm, DC-operation, 0.39 mW max. opt. power, laser class 1 acc. to DIN EN 60825-1. The use of these laser transmitter therefore requires no additional protective measures.
Available aperture sizes	round apertures: Ø 0.15 mm to Ø 3 mm, rectanglar apertures: 0.2 mm x 0.5 mm to 7 mm x 3 mm (7x3 = without aperture)
Measuring range	up to 7 mm (depends on the aperture used)
Working range	max. 10 m (depends on the aperture used and on cable length)
Min. detectable object	typ. 1% of aperture size
Threshold correction	can be activated via a software-controlled electronics of type SPECTRO-1-CONLAS or SPECTRO-2-CONLAS
Reproducibility	typ. 1% of aperture size, with threshold correction (via electronic control unit SPECTRO-1-CONLAS or SPECTRO-2-CONLAS): typ. 0.1% of aperture size
Optical filters	red light filter RG 630 and interference filter
Voltage supply	transmitter: +5VDC, receiver: +5VDC
Ambient light (outside light)	with 5000 Lux ambient light around optical receiver unit typ. < 300mV influence on analog signal (0...+10V)
Analog output (1x)	voltage 0 ... +10V or current 4...20mA in connection with an electronic control unit SPECTRO-1-CONLAS or SPECTRO-2-CONLAS
Band width analog signal	100 kHz (-3 dB)
Sensitivity setting (switching threshold)	via software-controlled electronics of type SPECTRO-1-CONLAS or SPECTRO-2-CONLAS
Gain (analog signal)	via software-controlled electronics of type SPECTRO-1-CONLAS or SPECTRO-2-CONLAS
Current consumption	transmitter: typ. 50 mA, receiver typ. 20 mA
Operating temperature range	0°C ... +50°C
Storage temperature range	-20°C ... +85°C
Type of connector	7-pole circular connector type Binder 712
Cable length	max. 5m
Housing material	brass, nickel-plated
Housing dimensions	transmitter and receiver: each Length approx. 90.5 mm x M18x1
Enclosure rating	IP67
EMC test acc. to	DIN EN 60947-5-2 CE

Dimensions

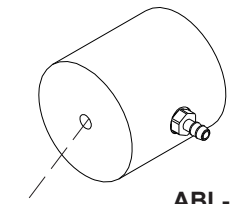


All dimensions in mm

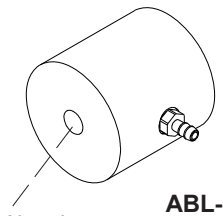
Accessories

Blast-air top-parts for A-LAS-M18-...-C
(please order blast-air top-parts separately
for each transmitter and receiver frontend):

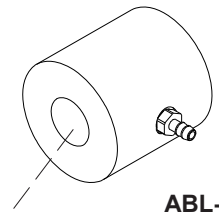
ABL-M18-3 (air exit opening Ø 3 mm)
ABL-M18-5 (air exit opening Ø 5 mm)
ABL-M18-10 (air exit opening Ø 10 mm)



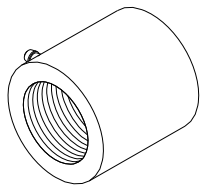
ABL-M18-3



ABL-M18-5



ABL-M18-10



Laser Information

The following applies to the use of laser sensor front ends of the A-LAS-N-...-C series in conjunction with the SPECTRO-1-CONLAS or SPECTRO-2-CONLAS electronic control unit:

The laser transmitters of A-LAS-N-...-C series comply with laser class 1 according to EN 60825-1. Under reasonably foreseeable conditions a class 1 laser is safe.
The reasonably foreseeable conditions are kept during specified normal operation.
The use of these laser transmitters therefore requires no additional protective measures.

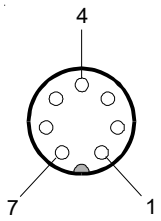
The laser transmitters of A-LAS-N-...-C series series are supplied with an information label „CLASS 1 Laser Product“.

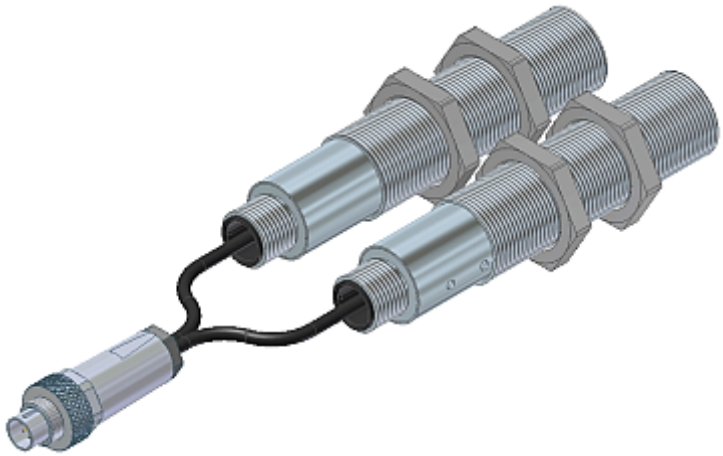
Class 1 Laser Product
IEC 60825-1: 2014
P<0.39 mW; λ=670 nm
COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR CONFORMANCE WITH IEC 60825-1 ED. 3, AS DESCRIBED IN LASER NOTICE NO. 56, DATED MAY 8, 2019.

Connector Assignment

Connection to electronic control unit SPECTRO-1-CONLAS or SPECTRO-2-CONLAS by means of a 7-pole circular connector Binder 712:

Pin No.:	Assignment:
1	GND (0V)
2	+5V
3	Intensity
4	+5V
5	ANALOG
6	Clock
7	GND (0V)





Connection directly to an electronic control unit of tpye SPECTRO-1-CONLAS bzw. SPECTRO-2-CONLAS

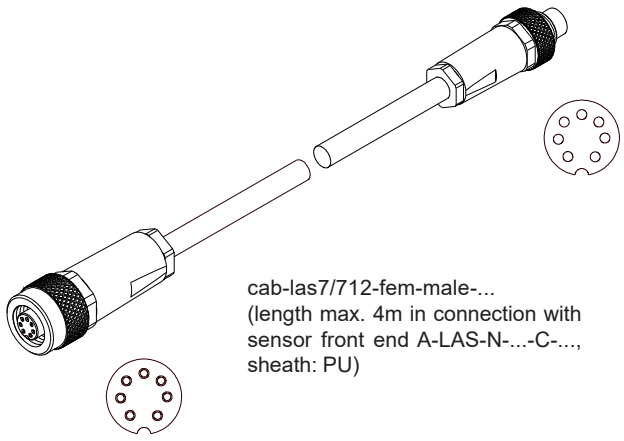
Available optionally
Extension cable
cab-las7/712-fem-male-...
(cable length 1m, 2m, 3m, 4m)
Please note:
Max. total length of the cable (A-LAS-N-...-C + extension cable) is 5m

Extension Cable

Available optionally:
Extension cable for sensor frontends of the A-LAS-N-...-C series
cab-las7/712-fem-male-(cable length)*

7-pole circular connector Binder 712:

Pin No.:	Assignment:
1	0V (GND)
2	+5V
3	Intensity
4	+5V
5	ANALOG
6	Clock
7	0V (GND)



cab-las7/712-fem-male-...
(length max. 4m in connection with sensor front end A-LAS-N-...-C-..., sheath: PU)

Serves to extend the integrated connection cable of an already existing sensor front end of the type A-LAS-N-...-C series to the control electronics control electronics SPECTRO-1-CONLAS or SPECTRO-2-CONLAS
*Cable length 1m, 2m, 3m, 4m

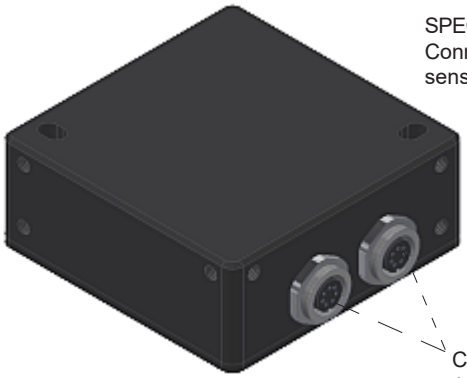
Please note:
The total cable length of A-LAS-N-...-C + extension cable must not exceed 5m:

A-LAS-N-...-C-1m (= length 1m) + cab-las7/712-fem-male-(...) length max. 4m
A-LAS-N-...-C-2m (= length 2m) + cab-las7/712-fem-male-(...) length max. 3m
A-LAS-N-...-C-3m (= length 3m) + cab-las7/712-fem-male-(...) length max. 2m
A-LAS-N-...-C-4m (= length 4m) + cab-las7/712-fem-male-(...) length max. 1m
A-LAS-N-...-C-5m (= length 5m) // no extension cable cab-las7/712-fem-male-(...) permitted

Electronic Control Unit

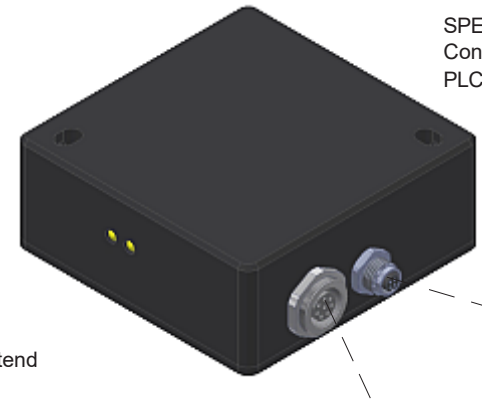
Electronic control unit SPECTRO-1-CONLAS with Windows® software SPECTRO1-Scope

- Electronic control unit for control of laser sensor frontends of A-LAS-N-...-C Series or FK-...-LAS-IR Series
- High scan frequency
- Gray scale detection (12-bit resolution)
- Insensitive to outside light (in AC-operation)
- Brightness correction can be activated (STAT/DYN)
- Averaging can be activated (from 1 up to over 32000 values)
- Teach via PC or PLC
- 2 digital inputs (0V/+Ub)
- 2 digital outputs (max. 60 kHz switching frequency)
- 1 analog output (0V...+10V or 4...20mA), selectable via software
- Switching state indication by means of 2 yellow LEDs
- RS232 interface (USB or ETHERNET converter available)
- Parameterizable via Windows® software, scope function
- Temperature compensated (from 0°C to 60°C)
- Automatic threshold correction can be activated
- Switching threshold can be parameterized relative or absolute
- Various switching threshold functions (window, upper/lower threshold)



SPECTRO-1-CONLAS
Connection side to
sensor front end

Connection of sensor frontend
A-LAS-N-...-C-...
directly to one of the two
7-pole fem. connector
(fem. connector can be
selected as desired)



SPECTRO-1-CONLAS
Connection side to
PLC / PC

Connection to PC
(Connecting cable:
cab-las4/PC-...,
cab-4/USB-... or
cab-4/ETH-500)

Connection to PLC
(Connecting cable:
cab-las8/SPS-...)

Electronic Control Unit

Electronic control unit SPECTRO-2-CONLAS with Windows® software SPECTRO2-Scope

- Electronic control unit for controlling up to two laser sensor frontends of the A-LAS-N-...-C series or FK-...-LAS-IR Series
- Wide range of applications
- Various evaluation modes available:
  Distance measurement (BICONE),
  contrast comparison (NORM),
  2-channel contrast control
- Fast evaluation methods in DC-operation available
  (up to 130kHz)
- Insensitive to outside light (in AC-operation)
- Parameterizable via Windows® software
- RS232 interface (RS232/Ethernet converter and
  RS232/USB converter available)
- Suitable for use in hazardous areas (fiber optics)
- 1 analog output (0V... +10V or 4mA...20mA), selectable via software
- 2 digital outputs (0V/+24V)
- External trigger input and teach input
- Linearization by means of an editable linearization curve