

Tw = 80 mm

- subminiature housing
- fixed sensing distance
- push-pull output



general data

type	background suppression
light source	pulsed red LED
alignment / soiled lens indicator	flashing light indicator
light indicator	LED yellow
wave length	660 nm
suppression of reciprocal influence	yes

electrical data

response time / release time	< 1 ms
voltage supply range +Vs	10 ... 30 VDC
current consumption max.	25 mA
current consumption typ.	18 mA
voltage drop Vd	< 1,8 VDC
output function	light / dark operate
output circuit	push-pull
output current	< 50 mA
short circuit protection	yes
reverse polarity protection	yes

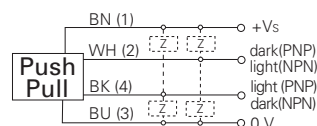
mechanical data

width / diameter	10,4 mm
height / length	27 mm
depth	14,7 mm
type	rectangular
housing material	plastic (ASA)
front (optics)	PMMA

ambient conditions

operating temperature	-25 ... +65 °C
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connection diagram



connectors

ESG 32AH0200	4 pin	2 m straight
ESW 31AH0200	4 pin	2 m angular

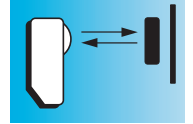
additional cable connectors and field wireable connectors, see accessories

accessories

SENSOFIX mounting kit	150326
mounting bracket (cable type)	114501
mounting bracket (connector type)	133792

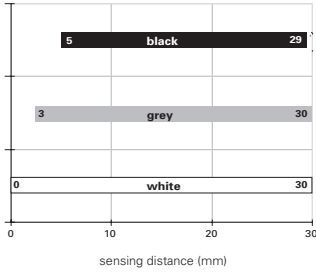
for details, see accessories section

order reference	sensing distance Tw	connection types	protection class
FHDK 10G5120	30 mm ±2 mm	cable 4 pin	IP 65
FHDK 10G5120/S35A	30 mm ±2 mm	connector M8, 4 pin	IP 67
FHDK 10G5121	50 mm ±3 mm	cable 4 pin	IP 65
FHDK 10G5121/S35A	50 mm ±3 mm	connector M8, 4 pin	IP 67
FHDK 10G5122	80 mm ±8 mm	cable 4 pin	IP 65
FHDK 10G5122/S35A	80 mm ±8 mm	connector M8, 4 pin	IP 67

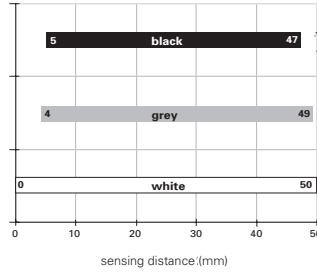


sensing distance diagram

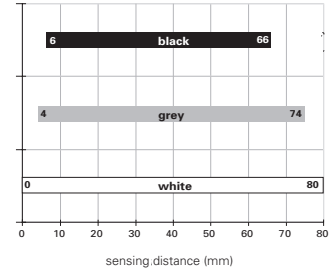
Tw = 30 mm ±2 mm



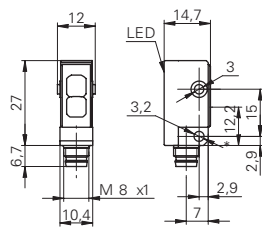
Tw = 50 mm ±3 mm



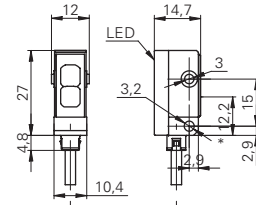
Tw = 80 mm ±8 mm



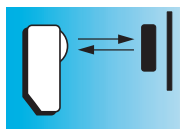
dimension drawings



* emitter axis



* emitter axis



Tw = 20 ... 120 mm

- subminiature housing
- large sensing range
- sensing distance adjustable via potentiometer



general data

type	background suppression
sensing distance Tw	20 ... 120 mm
sensing range Tb (at Tw max.)	5 ... 120 mm
sensing range Tb (at Tw min.)	5 ... 20 mm
alignment / soiled lens indicator	flashing light indicator
light indicator	LED yellow
sensing distance adjustment	mechanical, 5 turn
wave length	660 nm
suppression of reciprocal influence	yes

electrical data

response time / release time	< 1 ms
voltage supply range +Vs	10 ... 30 VDC
current consumption max.	30 mA
current consumption typ.	20 mA
voltage drop Vd	< 1,8 VDC
output current	< 100 mA
short circuit protection	yes
reverse polarity protection	yes

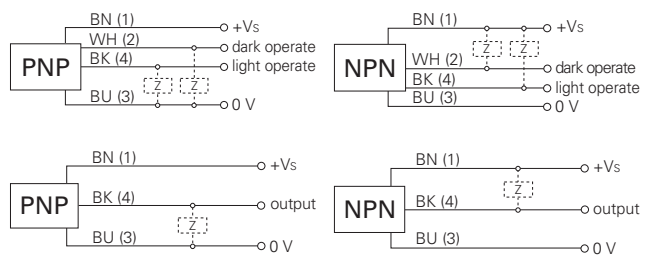
mechanical data

width / diameter	10,4 mm
height / length	27 mm
depth	14 mm
type	rectangular
housing material	plastic (ASA)
front (optics)	PMMA

ambient conditions

operating temperature	-25 ... +65 °C
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connection diagrams



connectors

ESG 32SH0200	3 pin	2 m straight
ESW 31SH0200	3 pin	2 m angular
ESG 32AH0200	4 pin	2 m straight
ESW 31AH0200	4 pin	2 m angular

additional cable connectors and field wireable connectors, see accessories

accessories

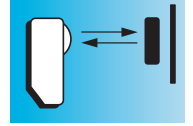
SENSOFIX mounting kit	150326
mounting bracket (cable type)	114501
mounting bracket (connector type)	133792

for details, see accessories section

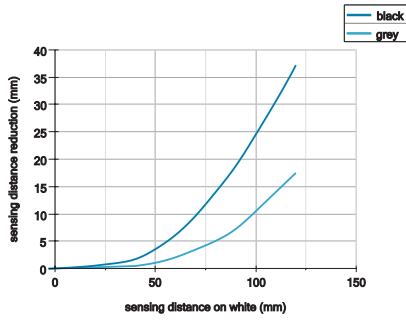
order reference	connection types	output circuit	output function	light source	beam diameter	protection class
FHDK 10N1101/KS35	flylead connector M8, 3 pin	NPN	light operate	pulsed red LED	4 mm	IP 65
FHDK 10N5101	cable 4 pin	NPN	light / dark operate	pulsed red LED	4 mm	IP 65
FHDK 10N5101/S35A	connector M8, 4 pin	NPN	light / dark operate	pulsed red LED	4 mm	IP 67
FHDK 10N5110	cable 4 pin	NPN	light / dark operate	pulsed point source LED	2 mm	IP 65
FHDK 10N5110/S35A	connector M8, 4 pin	NPN	light / dark operate	pulsed point source LED	2 mm	IP 67
FHDK 10P1101/KS35	flylead connector M8, 3 pin	PNP	light operate	pulsed red LED	4 mm	IP 65
FHDK 10P5101	cable 4 pin	PNP	light / dark operate	pulsed red LED	4 mm	IP 65
FHDK 10P5101/S35A	connector M8, 4 pin	PNP	light / dark operate	pulsed red LED	4 mm	IP 67
FHDK 10P5110	cable 4 pin	PNP	light / dark operate	pulsed point source LED	2 mm	IP 65

FHDK 10 Tw = 20 ... 120 mm

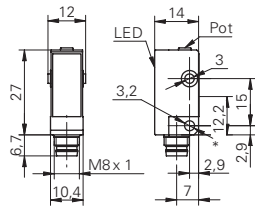
Diffuse sensors with background suppression



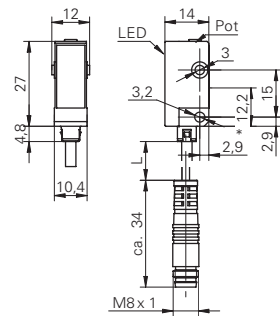
sensing distance diagram



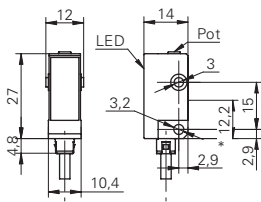
dimension drawings



* emitter axis



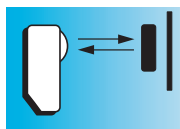
* emitter axis cable length L = 200 mm



* emitter axis

FHDK 10 Tw = 20 ... 120 mm

Diffuse sensors with background suppression



$T_w = 20 \dots 80 \text{ mm}$

- subminiature housing
- with line beam
- sensing distance adjustable via potentiometer



general data

type	background suppression
version	line beam
light source	pulsed red LED
sensing distance T_w	20 ... 80 mm
sensing range T_b (at T_w max.)	5 ... 80 mm
sensing range T_b (at T_w min.)	5 ... 20 mm
alignment / soiled lens indicator	flashing light indicator
light indicator	LED yellow
sensing distance adjustment	mechanical, 5 turn
wave length	660 nm
suppression of reciprocal influence	yes

electrical data

response time / release time	< 1 ms
voltage supply range +Vs	10 ... 30 VDC
current consumption max.	30 mA
current consumption typ.	20 mA
voltage drop V_d	< 1,8 VDC
output function	light / dark operate
output current	< 100 mA
short circuit protection	yes
reverse polarity protection	yes

mechanical data

width / diameter	10,4 mm
height / length	27 mm
depth	14 mm
type	rectangular
housing material	plastic (ASA)
front (optics)	PMMA

ambient conditions

operating temperature	-25 ... +65 °C
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connection diagrams



connectors

ESG 32AH0200	4 pin	2 m straight
ESW 31AH0200	4 pin	2 m angular

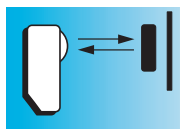
additional cable connectors and field wireable connectors, see accessories

accessories

SENSOFIX mounting kit	150326
mounting bracket (cable type)	114501
mounting bracket (connector type)	133792

for details, see accessories section

order reference	connection types	output circuit	protection class
FHDK 10N5150	cable 4 pin	NPN	IP 65
FHDK 10N5150/S35A	connector M8, 4 pin	NPN	IP 67
FHDK 10P5150	cable 4 pin	PNP	IP 65
FHDK 10P5150/S35A	connector M8, 4 pin	PNP	IP 67



Tw = 80 mm

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- fixed sensing distance
- push-pull output



general data

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light source	pulsed red LED
alignment / soiled lens indicator	flashing light indicator
light indicator	LED yellow
wave length	660 nm
suppression of reciprocal influence	yes

electrical data

response time / release time	< 1 ms
voltage supply range +Vs	10 ... 30 VDC
current consumption max.	25 mA
current consumption typ.	18 mA
voltage drop Vd	< 1,8 VDC
output function	light / dark operate
output circuit	push-pull
output current	< 50 mA
short circuit protection	yes
reverse polarity protection	yes

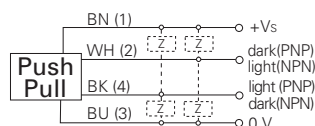
mechanical data

width / diameter	10,4 mm
height / length	27 mm
depth	14,7 mm
type	rectangular
housing material	plastic (ASA)
front (optics)	PMMA

ambient conditions

operating temperature	-25 ... +65 °C
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connection diagram



connectors

ESG 32AH0200	4 pin	2 m straight
ESW 31AH0200	4 pin	2 m angular

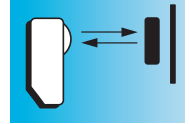
additional cable connectors and field wireable connectors, see accessories

accessories

SENSOFIX mounting kit	150326
mounting bracket (cable type)	114501
mounting bracket (connector type)	133792

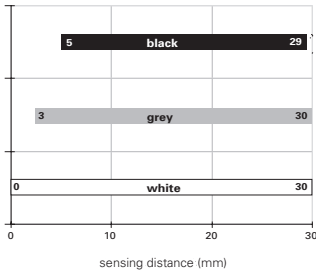
for details, see accessories section

order reference	sensing distance Tw	connection types	protection class
FHDK 10G5120	30 mm ±2 mm	cable 4 pin	IP 65
FHDK 10G5120/S35A	30 mm ±2 mm	connector M8, 4 pin	IP 67
FHDK 10G5121	50 mm ±3 mm	cable 4 pin	IP 65
FHDK 10G5121/S35A	50 mm ±3 mm	connector M8, 4 pin	IP 67
FHDK 10G5122	80 mm ±8 mm	cable 4 pin	IP 65
FHDK 10G5122/S35A	80 mm ±8 mm	connector M8, 4 pin	IP 67

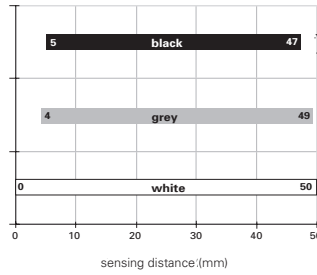


sensing distance diagram

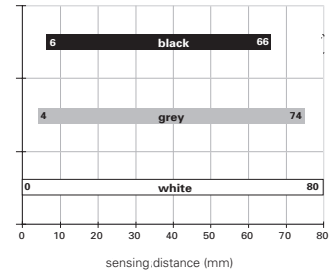
Tw = 30 mm ±2 mm



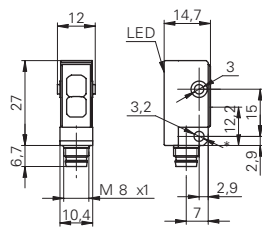
Tw = 50 mm ±3 mm



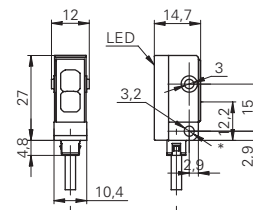
Tw = 80 mm ±8 mm



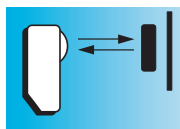
dimension drawings



* emitter axis



* emitter axis



Tw = 20 ... 120 mm

- subminiature housing
- large sensing range
- sensing distance adjustable via potentiometer



general data

type	background suppression
sensing distance Tw	20 ... 120 mm
sensing range Tb (at Tw max.)	5 ... 120 mm
sensing range Tb (at Tw min.)	5 ... 20 mm
alignment / soiled lens indicator	flashing light indicator
light indicator	LED yellow
sensing distance adjustment	mechanical, 5 turn
wave length	660 nm
suppression of reciprocal influence	yes

electrical data

response time / release time	< 1 ms
voltage supply range +Vs	10 ... 30 VDC
current consumption max.	30 mA
current consumption typ.	20 mA
voltage drop Vd	< 1,8 VDC
output current	< 100 mA
short circuit protection	yes
reverse polarity protection	yes

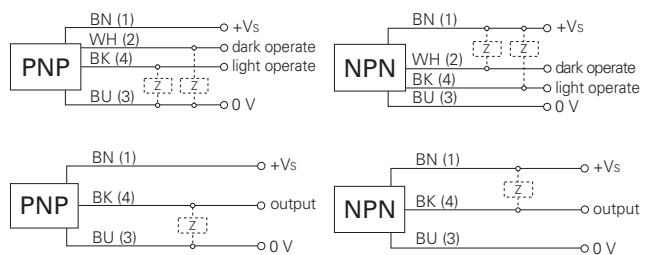
mechanical data

width / diameter	10,4 mm
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type	rectangular
housing material	plastic (ASA)
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ambient conditions

operating temperature	-25 ... +65 °C
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connection diagrams



connectors

ESG 32SH0200	3 pin	2 m straight
ESW 31SH0200	3 pin	2 m angular
ESG 32AH0200	4 pin	2 m straight
ESW 31AH0200	4 pin	2 m angular

additional cable connectors and field wireable connectors, see accessories

accessories

SENSOFIX mounting kit	150326
mounting bracket (cable type)	114501
mounting bracket (connector type)	133792

for details, see accessories section

order reference	connection types	output circuit	output function	light source	beam diameter	protection class
FHDK 10N1101/KS35	flylead connector M8, 3 pin	NPN	light operate	pulsed red LED	4 mm	IP 65
FHDK 10N5101	cable 4 pin	NPN	light / dark operate	pulsed red LED	4 mm	IP 65
FHDK 10N5101/S35A	connector M8, 4 pin	NPN	light / dark operate	pulsed red LED	4 mm	IP 67
FHDK 10N5110	cable 4 pin	NPN	light / dark operate	pulsed point source LED	2 mm	IP 65
FHDK 10N5110/S35A	connector M8, 4 pin	NPN	light / dark operate	pulsed point source LED	2 mm	IP 67
FHDK 10P1101/KS35	flylead connector M8, 3 pin	PNP	light operate	pulsed red LED	4 mm	IP 65
FHDK 10P5101	cable 4 pin	PNP	light / dark operate	pulsed red LED	4 mm	IP 65
FHDK 10P5101/S35A	connector M8, 4 pin	PNP	light / dark operate	pulsed red LED	4 mm	IP 67
FHDK 10P5110	cable 4 pin	PNP	light / dark operate	pulsed point source LED	2 mm	IP 65