

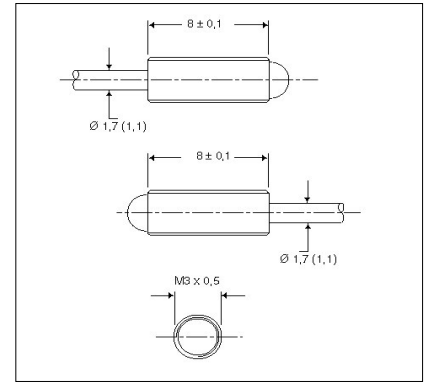
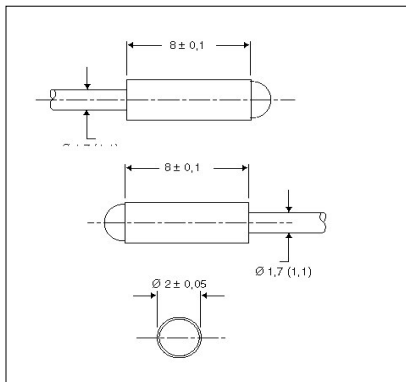
K J 10 - M 30 M B 45 - D P S - V1 - X000
T T T T T T T T T T T T
1 2 3 4 5 6 7 8 9 10 11 12

1= Working principle:	J	inductive	JR	inductive ring
			JF	inductive surface
			JG	inductive slot
			JD	full metal
	C	capacitive		
	M	magneto-resistive		
2= Switching distance / range				
3= Design:	M	cylindrical housings with metrical thread		
	G	cylindrical housings without thread		
	Q	square housings		
	D	ring housings		
4= Housing diameter / edge length				
5= Housing material:	M	brass, nickel plated	11= Kind of Connection:	V1 M8 screw / snap in
	E	stainless steel 1.4305		V2 M12 metal
	K	plastic		V2/1 M12 plastic
	A	aluminium		V3 M5 metal
				V4 Amphenol Tuchel
				V6 Brad Harrison
6= installation type:	B	shielded		V7 valve connector type A
	N	non shielded		V8 M8 only snap in
				V9 M12 only snap in
7= Tube length:		for cylindrical devices in mm		V10 valve connector type C
				V11 AC-connector 1/2" UNF
				V12 M18 plastic
8= Operating voltage:	D	DC direct-current voltage		VE Euchner connector
	AZ	AC alternating-current voltage		ZW termination box 90°
	VZ	AC/DC all voltages		RS232 data interface
				PG thread joint PG
				Mxx thread joint metrical
9= Type of the output signal:	P	FNP		more at inquiry
	N	NPN		
	Z	two-wire		
	AN	analog	ANI	current output
			ANU	voltage output
	NA	Namur		
10= Function:	S	N.O.		
	Ö	N.C.		
	A	changeover		
	U	switchable		
	I	impulse output		
	D	data interface		
12= Addition mark:	SF	weld field immune		
	T	high temperature		
	FE	reduction 1 to steel/iron		
	NF	reduction 1 to aluminium		
	X	customized design		
	W	angled sensing face / angled cable exit		
	AM	middle sensing face		



Opposed Mode

Operation only with corresponding amplifier.



Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Min. Object Size ¹⁾ or ²⁾

KOES300-G2EB8-X0301 IR
08363602000 (9960-2000)
Infrared Light 880 nm
¹⁾ 300 mm / ²⁾ 100 mm
¹⁾ 0,2 mm / ²⁾ 0,1 mm

KOES300-M3MB8-X0301 IR
08363102300 (9960-2300)
Infrared Light 880 nm
¹⁾ 300 mm / ²⁾ 100 mm
¹⁾ 0,2 mm / ²⁾ 0,1 mm

Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Min. Object Size ¹⁾ or ²⁾

KOES300-G2EB8-X0301 RL
08363602100
Red Light 660 nm
¹⁾ 300 mm / ²⁾ 100 mm
¹⁾ 0,2 mm / ²⁾ 0,1 mm

KOES300-M3MB8-X0301 RL
08363102400
Red Light 660 nm
¹⁾ 300 mm / ²⁾ 100 mm
¹⁾ 0,2 mm / ²⁾ 0,1 mm

Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Min. Object Size ¹⁾ or ²⁾

KOES800-G2EB8-X0301 IR
08363602200
Infrared Light 880 nm
¹⁾ 800 mm / ²⁾ 300 mm
¹⁾ 0,2 mm / ²⁾ 0,1 mm

KOES800-M3MB8-X IR
08363602500
Infrared Light 880 nm
¹⁾ 800 mm / ²⁾ 300 mm
¹⁾ 0,2 mm / ²⁾ 0,1 mm

Housing Material
Mounting
Connection
Type of Protection
Ambient Temperature

Stainless Steel
for Adhesion or Clamp Mounting
1m PUR-Cable with Connector
IP 65
-10°C bis +55°C

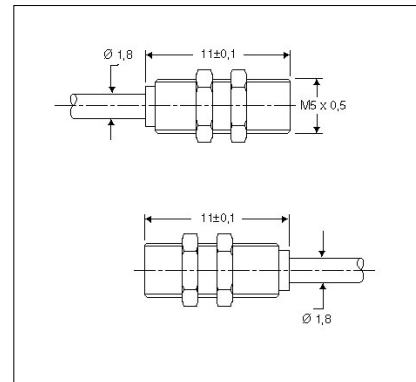
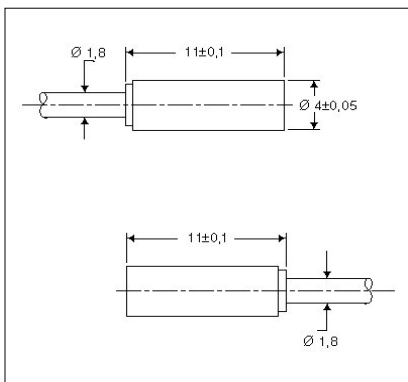
Brass, nickel plated
for Screw Mounting
1m PUR-Cable with Connector
IP 65
-10°C bis +55°C

	Amplifier Switchable ¹⁾ Standard Solution		²⁾ High Solution	
Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	AlarmOutput	AlarmOutput
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8



Opposed Mode

Operation only with corresponding amplifier.



Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Min. Object Size ¹⁾ or ²⁾

KOES1000-G4EB11-X0301 IR
08363602600 (9960-2600)
Infrared Light 880 nm
¹⁾ 1000 mm / ²⁾ 350 mm
¹⁾ 0,3 mm / ²⁾ 0,15 mm

KOES1000-M5MB11-X0301 IR
08363602800 (9960-2800)
Infrared Light 880 nm
¹⁾ 1000 mm / ²⁾ 350 mm
¹⁾ 0,3 mm / ²⁾ 0,15 mm

Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Min. Object Size ¹⁾ or ²⁾

KOES2000-G4EB11-X0301 IR
08363602700
Infrared Light 880 nm
¹⁾ 2000 mm / ²⁾ 700 mm
¹⁾ 0,3 mm / ²⁾ 0,15 mm

KOES2000-M5MB11-X0301 IR
08363602900
Infrared Light 880 nm
¹⁾ 2000 mm / ²⁾ 700 mm
¹⁾ 0,3 mm / ²⁾ 0,15 mm

Type
Order no. (Match-Code)

Housing Material
Mounting
Connection
Type of Protection
Ambient Temperature

Stainless Steel
for Adhesion or Clamp Mounting
1m PUR-Cable with Connector
IP 65
-10°C bis +55°C

Brass, nickel plated
for Screw Mounting
1m PUR-Cable with Connector
IP 65
-10°C bis +55°C

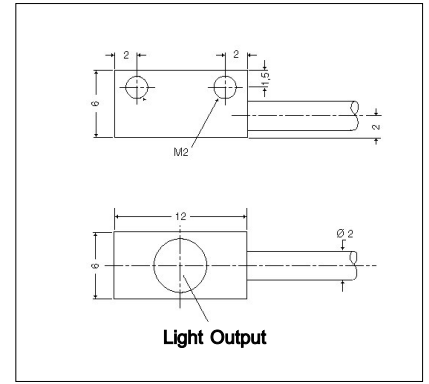
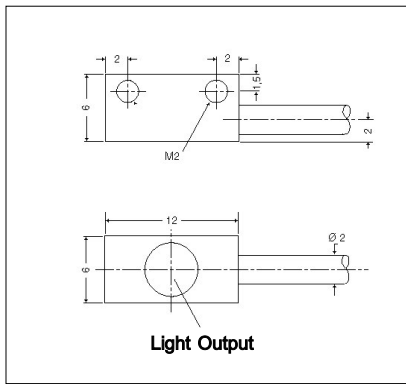
	Amplifier Switchable ¹⁾ Standard Solution		²⁾ High Solution	
--	--	--	-----------------------------	--

Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	Alarm Output	Alarm Output
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8



Opposed Mode

Operation only with corresponding amplifier.



Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Min. Object Size ¹⁾ or ²⁾

KOES1000-Q6MB12-X0301 IR
08363600500 (9960-0500)
Infrared Light 880 nm
¹⁾ 1000 mm / ²⁾ 350 mm
¹⁾ 0,3 mm / ²⁾ 0,15 mm

KOES4000-Q6MB12-X0301 IR
08363600700 (9960-0700)
Infrared Light 880 nm
¹⁾ 4000 mm / ²⁾ 1400 mm
¹⁾ 0,4 mm / ²⁾ 0,2 mm

Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Min. Object Size ¹⁾ or ²⁾

KOES2000-Q6MB12-X0301 IR
08363602100
Infrared Light 880 nm
¹⁾ 2000 mm / ²⁾ 700 mm
¹⁾ 0,3 mm / ²⁾ 0,15 mm

Type
Order no. (Match-Code)

Housing Material
Mounting
Connection
Type of Protection
Ambient Temperature

Brass, nickel plated
for Screw Mounting
1m PUR-Cable with Connector
IP 65
-10°C bis +55°C

Brass, nickel plated
for Screw Mounting
1m PUR-Cable with Connector
IP 65
-10°C bis +55°C

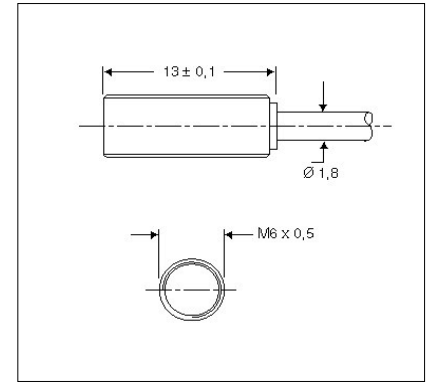
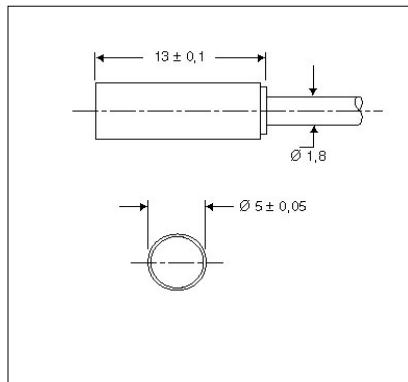
	Amplifier Switchable	¹⁾ Standard Solution	²⁾ High Solution	
--	----------------------	---------------------------------	-----------------------------	--

Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	Alarm Output	Alarm Output
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8



Opposed Mode

Operation only with corresponding amplifier



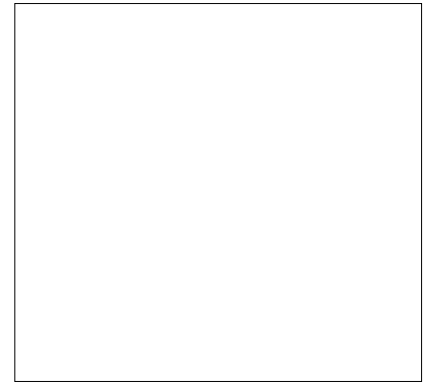
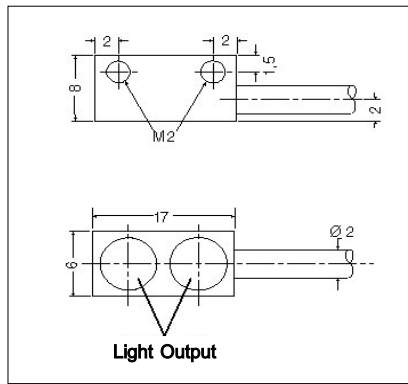
Type	KOES4000-G5EB13-X0301 IR	KOES4000-M6EM13-X0301 IR
Order no. (Match-Code)	08363603000 (9960-3000)	08363603100 (9960-3100)
Light	Infrared Light 880 nm	Infrared Light 880 nm
Sensing Distance ¹⁾ or ²⁾	¹⁾ 4000 mm / ²⁾ 1400 mm	¹⁾ 4000 mm / ²⁾ 1400 mm
Min. Object Size ¹⁾ or ²⁾	¹⁾ 0,4 mm / ²⁾ 0,2 mm	¹⁾ 0,4 mm / ²⁾ 0,2 mm
Type		
Order no. (Match-Code)		
Type		
Order no. (Match-Code)		
Housing Material	Stainless Steel	Brass, nickel plated
Mounting	for Adhesion or Clamp Mounting	for Screw Mounting
Connection	1m PUR-Cable with Connector	1m PUR-Cable with Connector
Type of Protection	IP 65	IP 65
Ambient Temperature	-10°C bis +55°C	-10°C bis +55°C

	Amplifier Switchable ¹⁾ Standard Solution		²⁾ High Solution	
Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	Alarm Output	Alarm Output
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8



**Retro-Reflectiv Mode
Clear-Glass-Detection**

Operation only with
corresponding amplifier.



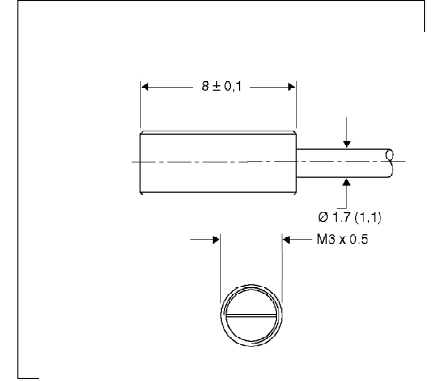
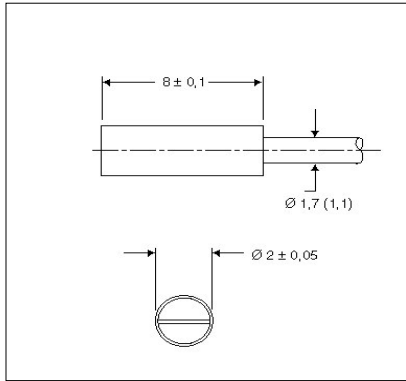
Type	KORS1500-Q6MB17-X0301 RL		
Order no. (Match-Code)	08361600400 (9960-0400)		
Light	Red Light 660 nm		
Sensing Distance to Reflector	with Polarizing Filter ¹⁾ or ²⁾ 1) 1500 mm / 2) 500 mm		
Type			
Order no. (Match-Code)			
Type			
Order no. (Match-Code)			
Housing Material	Brass, nickel plated		
Mounting	for Screw Mounting		
Connection	1m PUR-Cable with Connector		
Type of Protection	IP 65		
Ambient Temperature	-10°C bis +55°C		

	Amplifier Switchable	¹⁾ Standard Solution	²⁾ High Solution	
Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	Alarm Output	Alarm Output
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8



Convergent Mode

Operation only with corresponding amplifier.



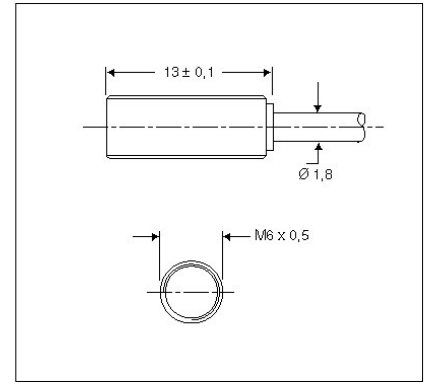
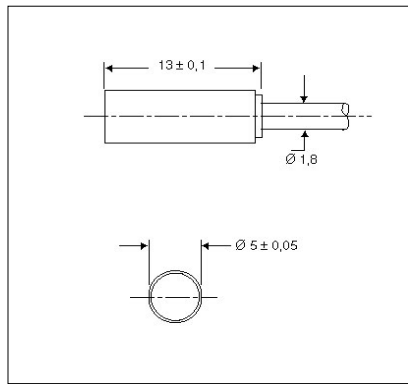
Type	KORT12-G2EB8-X0301 IR	KORT12-M3MB8-X0301 IR
Order no. (Match-Code)	08361601100 (9960-1100)	08361601200 (9960-1200)
Light	Infrared Light 880 nm	Infrared Light 880 nm
Sensing Distance ¹⁾ or ²⁾	¹⁾ 12 mm / ²⁾ 3 mm	¹⁾ 12 mm / ²⁾ 3 mm
Sensing Distance to Reflector ¹⁾ or ²⁾	¹⁾ 250 mm / ²⁾ 80 mm	¹⁾ 250 mm / ²⁾ 80 mm
Type		
Order no. (Match-Code)		
Type		
Order no. (Match-Code)		
Housing Material	Stainless Steel	Brass, nickel plated
Mounting	for Adhesion or Clamp Mounting	for Screw Mounting
Connection	1m PUR-Cable with Connector	1m PUR-Cable with Connector
Type of Protection	IP 65	IP 65
Ambient Temperature	-10°C bis +55°C	-10°C bis +55°C

	Amplifier Switchable ¹⁾ Standard Solution		²⁾ High Solution	
Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	Alarm Output	Alarm Output
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8



Convergent Mode

Operation only with corresponding amplifier.



Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Sensing Distance to Reflector ¹⁾ or ²⁾

KORT60-G5EB13-X0301 IR
08361601300 (9960-1300)
Infrared Light 880 nm
¹⁾ 60 mm / ²⁾ 15 mm
¹⁾ 800 mm / ²⁾ 200 mm

KORT60-M6MB13-X0301 IR
08361601600 (9960-1600)
Infrared Light 880 nm
¹⁾ 60 mm / ²⁾ 15 mm
¹⁾ 800 mm / ²⁾ 200 mm

Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Sensing Distance to Reflector ¹⁾ or ²⁾

KORT60-M5EB13-X0301 RL
08361601400 (9960-1400)
Red Light 660 nm
¹⁾ 60 mm / ²⁾ 15 mm
¹⁾ 800 mm / ²⁾ 200 mm

KORT60-M6MB13-X0301 RL
08361601700 (9960-1700)
Red Light 660 nm
¹⁾ 60 mm / ²⁾ 15 mm
¹⁾ 800 mm / ²⁾ 200 mm

Type
Order no. (Match-Code)
Light
Sensing Distance ¹⁾ or ²⁾
Sensing Distance to Reflector ¹⁾ or ²⁾

KORT100-G5EB13-X0301 IR
08361601500 (9960-1500)
Infrared Light 880 nm
¹⁾ 100 mm / ²⁾ 25 mm
¹⁾ 1200 mm / ²⁾ 300 mm

KORT100-M6MB13-X0301 IR
08361601800 (9960-1800)
Infrared Light 880 nm
¹⁾ 100 mm / ²⁾ 25 mm
¹⁾ 1200 mm / ²⁾ 300 mm

Housing Material
Mounting
Connection
Type of Protection
Ambient Temperature

Stainless Steel
for Adhesion or Clamp Mounting
1m PUR-Cable with Connector
IP 65
-10°C bis +55°C

Brass, nickel plated
for Screw Mounting
1m PUR-Cable with Connector
IP 65
-10°C bis +55°C

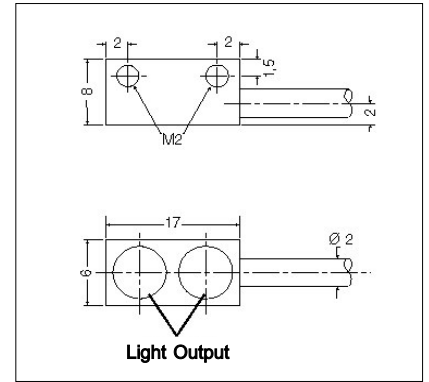
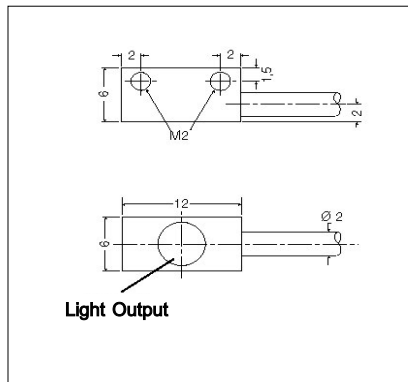
	Amplifier Switchable	¹⁾ Standard Solution	²⁾ High Solution	
--	-----------------------------	--	------------------------------------	--

Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	Alarm Output	Alarm Output
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8



Convergent Mode

Operation only with corresponding amplifier.



Type	KORT60-Q6MB12-X0301 IR	KORT200-Q6MB17-X0301 IR
Order no. (Match-Code)	08361600000 (9860-0000)	08361600300 (9860-0300)
Light	Infrared 880 nm	Infrared 880 nm
Sensing Distance ¹⁾ or ²⁾	¹⁾ 60 mm / ²⁾ 15 mm	¹⁾ 60 mm / ²⁾ 15 mm
Sensing Distance to Reflector ¹⁾ or ²⁾	¹⁾ 800 mm / ²⁾ 200 mm	¹⁾ 3000 mm / ²⁾ 700 mm
Type	KORT60-Q6MB12-X0301 RL	
Order no. (Match-Code)	08361600100 (9860-0100)	
Light	Red Light 660 nm	
Sensing Distance ¹⁾ or ²⁾	¹⁾ 60 mm / ²⁾ 15 mm	
Sensing Distance to Reflector ¹⁾ or ²⁾	¹⁾ 800 mm / ²⁾ 200 mm	
Type	KORT100-Q6MB12-X0301 IR	
Order no. (Match-Code)	08361600200 (9860-0200)	
Light	Infrared Light 880 nm	
Sensing Distance ¹⁾ or ²⁾	¹⁾ 100 mm / ²⁾ 25 mm	
Sensing Distance to Reflector ¹⁾ or ²⁾	¹⁾ 1200 mm / ²⁾ 300 mm	
Housing Material	Brass, nickel plated	
Mounting	for Screw Mounting	
Connection	1m PUR-Cable with Connector	
Type of Protection	IP 65	
Ambient Temperature	-10°C bis +55°C	

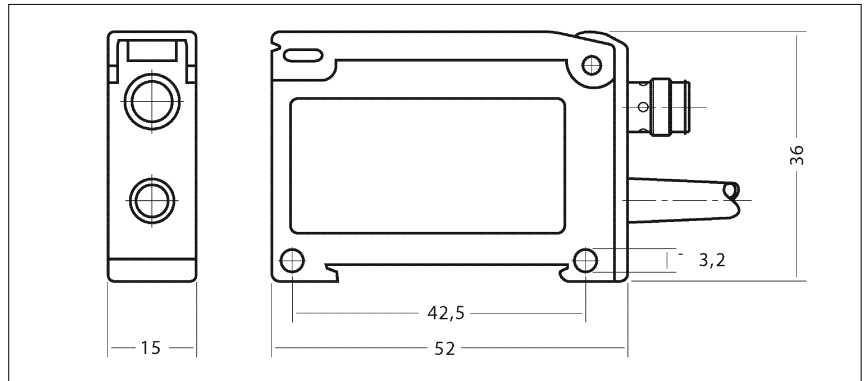
	Amplifier Switchable ¹⁾ Standard Solution		²⁾ High Solution	
Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	Alarm Output	Alarm Output
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8

Amplifier for optical Mini-Sensors



Operation with corresponding sensors.

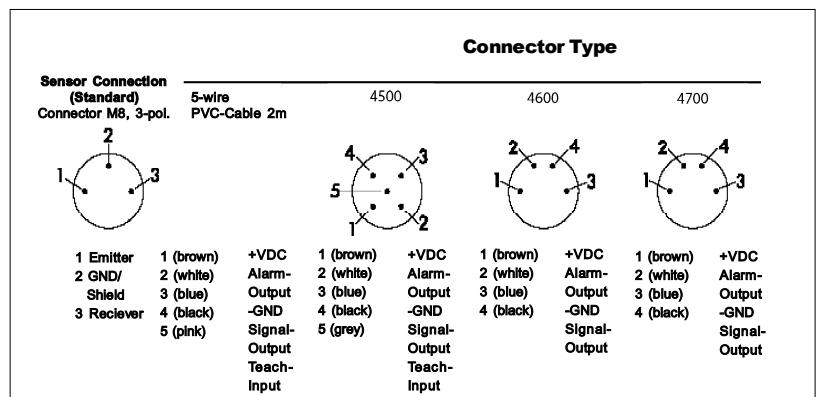
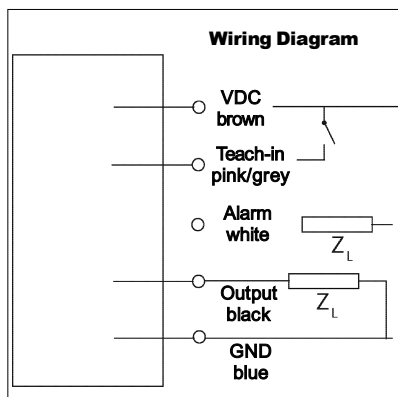
Operating Voltage	U_b
Output Current	I_b
Limiting Frequency	
Principle of Operation	
Pulse Extentsion	
Adjustment	
Function / Operating Indicator	
Operating Status	
Housing Material / Weight	
Ambient Temperature	
Type of Protection	
Current Consumption (no load)	
Mounting	
Order no.	
Output Function	
Connection	
Specials	
Order no.	
Output Function	
Connection	



General Specification of the Following Amplifier

Operating Voltage	10 ... +30 VDC
Output Current	100 mA, Short Circuit Protection
Limiting Frequency	500 Hz
Principle of Operation	Switched
Pulse Extentsion	0 ms, 10 ms, 20 ms, 50 ms, 100 ms oder 200 ms Selectable
Adjustment	Teach-Input
Function / Operating Indicator	yellow and red LED's
Operating Status	LED green
Housing Material / Weight	Plastic ABS, 55g
Ambient Temperature	-10 ... +55 °C
Type of Protection	IP 65
Current Consumption (no load)	max. 50 mA
Mounting	DIN - Rail

Order no.	08369614100	08369614200	08369614500	08369614600
Output Function	NPN	NPN	PNP	PNP
Connection	Connector M12	Connector M8	Connector M12	Connector M8
Specials	Alarm Output	Alarm Output	Alarm Output	Alarm Output
Order no.	08369614000	08369614300	08369614400	08369614700
Output Function	NPN	NPN	PNP	PNP
Connection	2m Cable	Connector M8	2m Cable	Connector M8



A large empty rectangular box with a black border, intended for taking notes.

Table of Contents

<u>Type</u>	<u>Art-Nr.</u>	<u>Site</u>
<u>Opposed Mode</u>		
KOES300-G2EB8-X0301 IR	08363602000	3
KOES300-G2EB8-X0301 RL	08363602100	3
KOES800-G2EB8-X0301 IR	08363602200	3
KOES300-M3MB8-X0301 IR	08363102300	3
KOES300-M3MB8-X0301 RL	08363102400	3
KOES800-M3MB8-X0301 IR	08363102500	3
KOES1000-G4EB11-X0301 IR	08363602600	4
KOES2000-G4EB11-X0301 IR	08363602700	4
KOES1000-M5MB11-X0301 IR	08363602800	4
KOES2000-M5MB11-X0301 IR	08363602900	4
KOES1000-Q6MB12-X0301 IR	08363600500	5
KOES2000-Q6MB12-X0301 IR	08363600600	5
KOES4000-Q6MB12-X0301 IR	08363600700	5
KOES4000-G5EB13-X0301 IR	08363603000	6
KOES4000-M6EM13-X0301 IR	08363603100	6
<u>Retro-Reflectiv Mode for Clear-Glass-Detection</u>		
KORS1500-Q6MB17-X0301 RL	08361600400	7
<u>Convergent Mode</u>		
KORT12-G2EB8-X0301 IR	08361601100	8
KORT12-M3MB8-X0301 IR	08361601200	8
KORT60-G5EB13-X0301 IR	08361601300	9
KORT60-M5EB13-X0301 RL	08361601400	9
KORT100-G5EB13-X0301 IR	08361601500	9
KORT60-M6MB13-X0301 IR	08361601600	9
KORT60-M6MB13-X0301 RL	08361601700	9
KORT100-M6MB13-X0301 IR	08361601800	9
KORT60-Q6MB12-X0301 IR	08361600000	10
KORT60-Q6MB12-X0301 RL	08361600100	10
KORT100-Q6MB12-X0301 IR	08361600200	10
KORT200-Q6MB17-X0301 IR	08361600300	10
<u>Amplifier for optical Sensors</u>		11