

SELECTION GUIDE

Forked sensors for detecting small parts

Application



Detection of small parts in a feed system

Products and mouth widths [mm]



GS 04 from **page 264** onwards
Mouth widths: **20 / 30 / 50 / 80 / 120 / 220**



GSL 04 from **page 264** onwards
Mouth widths: **30 / 50 / 80**



GS 21 from **page 264** onwards
Mouth widths: **8**

FORKED SENSORS

Forked sensors for detecting labels

Application



Detection of paper, transparent or metallised labels

Products and mouth widths [mm]



GS 06
Mouth widths: 2 / 5

from **page 270** onwards



GK 14
Mouth widths: 0.9

from **page 276** onwards



GSU 06
Mouth widths: 2.5

from **page 280** onwards



GSU 14B
Mouth widths: 4

from **page 280** onwards

Using the sensors with different label materials

Sensors	Base material	Label material		
		PAPER	TRANSPARENT	METALLISED
Optical forked sensors GS 06	PAPER	●		
	TRANSPARENT	●		
Capacitive forked sensors GK 14	PAPER	●	●	
	TRANSPARENT	●	●	
Ultrasonic forked sensors GSU 06, GSU 14B	PAPER	●	●	●
	TRANSPARENT	●	●	●

GS(L) 04 / GS 21

Optical forked sensors	Mouth widths	Page
 Optical forked sensors GS 04	20 / 30 / 50 / 80 / 120 / 220mm	266
 Optical laser forked sensors GSL 04	30 / 50 / 80mm	268
 Optical forked sensors GS 21	8mm	268

Additional products - forked sensors:

 Optical forked sensors	GS 06	270
 Capacitive forked sensors	GK 14	276
 Ultrasonic forked sensors	GSU 06, GSU 14B	280

Common technical data

Electrical data	Operating voltage U_B	GS 04: 10 ... 30VDC GS 21: 24VDC
	Residual ripple	$\leq 15\%$ of U_B
	Open-circuit current	$\leq 35\text{mA} \leq 90\text{mA}$
	Signal voltage high/low	$\geq (U_B - 2\text{V}) / \leq 2\text{V}$
Indicators	Red LED	Light path free
Mechanical data	Housing	Aluminium, anodised
	Optics cover	Glass
	Weight	28g ... 220g
Environmental data	Ambient temperature (operation)	GS 04: $-10^\circ\text{C} \dots +60^\circ\text{C}$ GS 21: $-20^\circ\text{C} \dots +60^\circ\text{C}$
	VDE safety class	III
	Protection class	IP 65
	Standards applied	IEC 60947-5-2



Features

- Sensitivity adjustment and light/dark switching on rear side of fork
- Visible red light and laser
- All common mouth widths



Optical Sensor ABCs

- Throughbeam sensors Page 409

OPTICAL FORKED SENSORS

Part description Part No.:	Mouth width [mm]	Switching frequency	Light source	Output	Switching	Response time	
Optical forked sensors							
GS 04 M/P - 20 - S8 501 02550	20	1500Hz	Red light	PNP	Light/dark reversible	0.2ms	
GS 04 M/P - 30 - S8 500 41520	30	1500Hz	Red light	PNP	Light/dark reversible	0.2ms	
GS 04 M/N - 30 - S8 500 41679	30	1500Hz	Red light	NPN	Light/dark reversible	0.2ms	
GS 04 M/P - 50 - S8 500 41521	50	1500Hz	Red light	PNP	Light/dark reversible	0.2ms	
GS 04 M/N - 50 - S8 500 41677	50	1500Hz	Red light	NPN	Light/dark reversible	0.2ms	
GS 04 M/P - 80 - S8 500 41522	80	1500Hz	Red light	PNP	Light/dark reversible	0.2ms	
GS 04 M/N - 80 - S8 500 41678	80	1500Hz	Red light	NPN	Light/dark reversible	0.2ms	
GS 04 M/P - 120 - S8 500 41523	120	1500Hz	Red light	PNP	Light/dark reversible	0.2ms	
GS 04 M/N - 120 - S8 500 41552	120	1500Hz	Red light	NPN	Light/dark reversible	0.2ms	
GS 04 M/P - 220 - S8 500 41524	220	1500Hz	Red light	PNP	Light/dark reversible	0.2ms	
GS 04 M/N - 220 - S8 500 41553	220	1500Hz	Red light	NPN	Light/dark reversible	0.2ms	

Accessories / connection cables

More accessories can be found from **page 364** onwards

Part No.	Designation	Features
a 501 04521	K - D M8W - 3P - 2m - PVC	Connection cable 2000mm, M8 angular, 3-pin, PVC
b 501 04520	K - D M8A - 3P - 2m - PVC	Connection cable 2000mm, M8 axial, 3-pin, PVC
c 501 04523	K - D M8W - 3P - 5m - PVC	Connection cable 5000mm, M8 angular, 3-pin, PVC
d 501 04522	K - D M8A - 3P - 5m - PVC	Connection cable 5000mm, M8 axial, 3-pin, PVC



GS 04

Optical forked sensors



Standard
Sensors

Measuring
Sensors

Ultrasonic
Sensors

Forked
Sensors

Special
Sensors

Fibre Optic
Sensors

Light
Curtains

Protective
Sensors

Ex
Sensors

AS-interface
Sensors

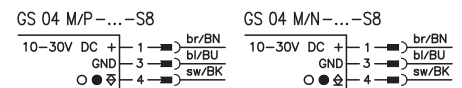
	Repeatability	Connection	Option	Accessories	
	0.02 mm	M8 connector	1	a, b, c, d	
	0.02 mm	M8 connector	1	a, b, c, d	
	0.02 mm	M8 connector	1	a, b, c, d	
	0.04 mm	M8 connector	1	a, b, c, d	
	0.04 mm	M8 connector	1	a, b, c, d	
	0.06 mm	M8 connector	1	a, b, c, d	
	0.06 mm	M8 connector	1	a, b, c, d	
	0.08 mm	M8 connector	1	a, b, c, d	
	0.08 mm	M8 connector	1	a, b, c, d	
	0.08 mm	M8 connector	1	a, b, c, d	
	0.08 mm	M8 connector	1	a, b, c, d	



Optical Sensor ABCs

- Throughbeam sensors Page 409
- Connection types Page 414
- Outputs Page 414

Electrical connection



Options

- 1 Sensitivity adjustment via potentiometer

www.leuze.de/forked_sensors/

OPTICAL FORKED SENSORS

Part description Part No.:	Mouth width [mm]	Switching frequency	Light source	Output	Switching	Response time	
Optical forked sensors							
GSL 04 M/P - 30 - S8 501 03737	30	3000Hz	Red light laser class 2	PNP	Light/dark reversible	0.1 ms	
GSL 04 M/P - 50 - S8 501 03738	50	3000Hz	Red light laser class 2	PNP	Light/dark reversible	0.1 ms	
GSL 04 M/P - 80 - S8 501 03739	80	3000Hz	Red light laser class 2	PNP	Light/dark reversible	0.1 ms	
GS 21 / 4 G, 5000 500 13967	8	1000Hz	Infrared light	PNP	Light	0.5 ms	

Accessories / connection cables

More accessories can be found from **page 364** onwards

Part No.	Designation	Features	
a 501 04521	K - D M8W - 3P - 2m - PVC	Connection cable 2000mm, M8 angular, 3-pin, PVC	
b 501 04520	K - D M8A - 3P - 2m - PVC	Connection cable 2000mm, M8 axial, 3-pin, PVC	
c 501 04523	K - D M8W - 3P - 5m - PVC	Connection cable 5000mm, M8 angular, 3-pin, PVC	
d 501 04522	K - D M8A - 3P - 5m - PVC	Connection cable 5000mm, M8 axial, 3-pin, PVC	



GS 04/21
Page 264



GS 06
Page 270



GK 14
Page 276



GSU 06/14B
Page 280



	Repeatability	Connection	Option	Accessories	
	0.015 mm	M8 connector	1	a, b, c, d	
	0.015 mm	M8 connector	1	a, b, c, d	
	0.015 mm	M8 connector	1	a, b, c, d	
		Cable, 5 m			

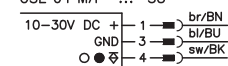


Optical Sensor ABCs

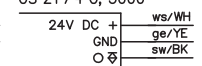
- Throughbeam sensors Page 409
- Connection types Page 414
- Outputs Page 414
- Sensors w. laser transmitter Page 415

Electrical connection

GSL 04 M/P - ... - S8



GS 21 / 4 G, 5000



Options

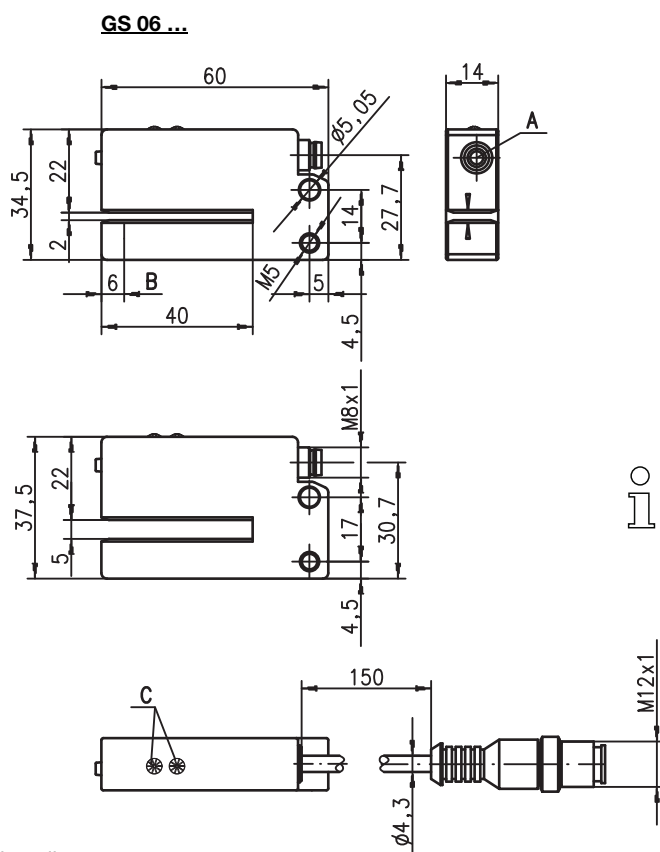
- | | |
|---|--|
| 1 | Sensitivity adjustment via potentiometer |
|---|--|

OVERVIEW OF OPTICAL FORKED SENSORS



Detection of paper labels

Dimensioned drawing



- A** Teach-in button or sensitivity adjustment
- B** Optical axis
- C** Indicator diodes



GS 04/21
Page 264



GS 06
Page 270



GK 14
Page 276



GSU 06/14B
Page 280

GS 06

Optical forked sensors	Mouth widths	Page
 Optical forked sensors GS 06	2 / 5mm	272

Additional products - forked sensors:

 Optical forked sensors	GS 04, GSL 04, GS 21	264
 Capacitive forked sensors	GK 14	276
 Ultrasonic forked sensors	GSU 06, GSU 14B	280
 Measuring CCD forked sensors	GS 754	240



Common technical data

Electrical data	Operating voltage U_B	10 ... 30VDC
	Residual ripple	$\leq 15\%$ of U_B
	Open-circuit current	$\leq 40\text{mA}$
	Signal voltage high/low	$\geq (U_B - 2V) / \leq 2V$
Indicators	Yellow LED	Light path free
Mechanical data	Housing	Metal
	Weight	80g ... 125g
Environmental data	Ambient temperature (operation)	-20°C ... +60°C
	VDE safety class	III
	Protection class	IP 65
	Standards applied	IEC 60947-5-2, UL 508

Features

- Detection of paper labels
- Conveyor speeds up to 12m/s
- Simple adjustment via teach-in button or remote calibration
- Large mouth width e.g. for booklets
- Protected against ambient light through light modulation



Optical Sensor ABCs

- Throughbeam sensors Page 409

OPTICAL FORKED SENSORS

Part description Part No.:	Mouth width [mm]	Switching frequency	Light source	Output	Switching	Response time	
Optical forked sensors							
GS 06 / 6 - 2 - S8.3 501 03601	2	8000Hz	Infrared light	1 x push-pull	PNP light NPN dark	0.0625ms	
GS 06 / 6.3 - 2 - S8 500 39573	2	8000Hz	Infrared light	1 x push-pull	PNP light NPN dark	0.0625ms	
GS 06 / 6D.3 - 2 - S8 501 01691	2	8000Hz	Infrared light	1 x push-pull	PNP dark NPN light	0.0625ms	
GS 06 / 66D - 2, 430 - S12 500 39562	2	8000Hz	Infrared light	2 x push-pull	PNP dark NPN light	0.0625ms	
GS 06 / 66 - 2 - S8 500 39565	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66.2 - 2 - S8 500 39571	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66.26 - 2 - S8 501 03495	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66 - 2 500 39567	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66.6 - 2, 550 501 05653	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66.6 - 2 500 41261	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	

Accessories / connection cables

More accessories can be found from **page 364** onwards

Part No.	Designation	Features
a 501 04523	K - D M8W - 3P - 5m - PVC	Connection cable 5000mm, M8 angular, 3-pin, PVC
b 501 04522	K - D M8A - 3P - 5m - PVC	Connection cable 5000mm, M8 axial, 3-pin, PVC
c 501 04527	K - D M8W - 4P - 5m - PVC	Connection cable 5000mm, M8 angular, 4-pin, PVC
d 501 04526	K - D M8A - 4P - 5m - PVC	Connection cable 5000mm, M8 axial, 4-pin, PVC
e 501 04545	K - D M12W - 4P - 5m - PVC	Connection cable 5000mm, M12 angular, 4-pin, PVC
f 501 04544	K - D M12A - 4P - 5m - PVC	Connection cable 5000mm, M12 axial, 4-pin, PVC



GS 04/21
Page 264



GS 06
Page 270



GK 14
Page 276



GSU 06/14B
Page 280

GS 06

Optical forked sensors



Standard
Sensors

Measuring
Sensors

Ultrasonic
Sensors

Forked
Sensors

Special
Sensors

Fibre Optic
Sensors

Light
Curtains

Protective
Sensors

Ex
Sensors

AS-interface
Sensors

	Repeatability	Connection	Option	Accessories	
	± 0.15 mm	M8 connector	1, 5	a, b	
	± 0.15 mm	M8 connector ¹⁾	2, 3, 5	c, d	
	± 0.15 mm	M8 connector	2, 3, 5	c, d	
	± 0.15 mm	Cable, 430 mm, with M12 connector	1, 5	e, f	
	± 0.15 mm	M8 connector	1, 5	c, d	
	± 0.15 mm	M8 connector	2, 5	c, d	
	± 0.15 mm	M8 connector	2, 4, 5	c, d	
	± 0.15 mm	Cable, 2 m	1, 5		
	± 0.15 mm	Cable, 0.55 m	1, 4, 5		
	± 0.15 mm	Cable, 2 m	1, 4, 5		

1) When using right-angle plugs, cable outlet must point upward!

Options

- 1 Sensitivity adjustment via multiturn potentiometer
- 2 Sensitivity adjustment via teach button
- 3 Sensitivity adjustment via teach input
- 4 Housing colour: black RAL 9004
- 5 UL approval

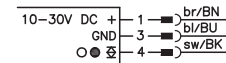


Optical Sensor ABCs

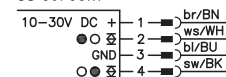
- Throughbeam sensors Page 409
- Connection types Page 414
- Outputs Page 414

Electrical connection

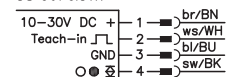
GS 06/6...-S8.3



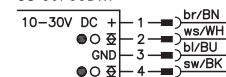
GS 06/66...



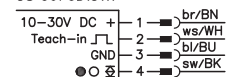
GS 06/6.3...



GS 06/66D...



GS 06/6D.3...



OPTICAL FORKED SENSORS

Part description Part No.:	Mouth width [mm]	Switching frequency	Light source	Output	Switching	Response time	
Optical forked sensors							
GS 06 / 66.2 - 2 500 39569	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66.26 - 2 501 03524	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66 - 2, 150 - S12 500 39558	2	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 6.3 - 5 - S8 500 39575	5	8000Hz	Infrared light	1 x push-pull	PNP light NPN dark	0.0625ms	
GS 06 / 66 - 5 - S8 500 39566	5	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66.2 - 5 - S8 500 39572	5	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66 - 5, 360 500 39560	5	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66 - 5 500 39568	5	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66.2 - 5 500 39570	5	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	
GS 06 / 66.2 - 5, 150 - S12 501 02994	5	8000Hz	Infrared light	2 x push-pull	Light/dark antivalent	0.0625ms	

Accessories / connection cables

More accessories can be found from **page 364** onwards

Part No.	Designation	Features
a 501 04525	K - D M8W - 4P - 2m - PVC	Connection cable 2000mm, M8 angular, 4-pin, PVC
b 501 04524	K - D M8A - 4P - 2m - PVC	Connection cable 2000mm, M8 axial, 4-pin, PVC
c 501 04527	K - D M8W - 4P - 5m - PVC	Connection cable 5000mm, M8 angular, 4-pin, PVC
d 501 04526	K - D M8A - 4P - 5m - PVC	Connection cable 5000mm, M8 axial, 4-pin, PVC
e 501 04545	K - D M12W - 4P - 5m - PVC	Connection cable 5000mm, M12 angular, 4-pin, PVC
f 501 04544	K - D M12A - 4P - 5m - PVC	Connection cable 5000mm, M12 axial, 4-pin, PVC



GS 04/21
Page 264



GS 06
Page 270



GK 14
Page 276



GSU 06/14B
Page 280

GS 06

Optical forked sensors



Standard
Sensors

Measuring
Sensors

Ultrasonic
Sensors

Forked
Sensors

Special
Sensors

Fibre Optic
Sensors

Light
Curtains

Protective
Sensors

Ex
Sensors

AS-interface
Sensors

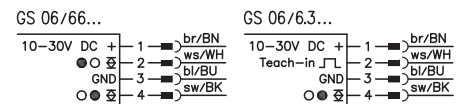
	Repeatability	Connection	Option	Accessories	
	± 0.15 mm	Cable, 2 m	2, 5		
	± 0.15 mm	Cable, 2 m	2, 4, 5		
	± 0.15 mm	Cable, 150 mm, with M12 connector	1, 5	e, f	
	± 0.15 mm	M8 connector	2, 3, 5	a, b, c, d	
	± 0.15 mm	M8 connector	1, 5	a, b, c, d	
	± 0.15 mm	M8 connector	2, 5	a, b, c, d	
	± 0.15 mm	Cable, 0.36 m	1, 5		
	± 0.15 mm	Cable, 2 m	1, 5		
	± 0.15 mm	Cable, 2 m	2, 5		
	± 0.15 mm	Cable, 150 mm, with M12 connector	2, 5	e, f	



Optical Sensor ABCs

- Throughbeam sensors Page 409
- Connection types Page 414
- Outputs Page 414

Electrical connection



Options

- 1 Sensitivity adjustment via multiturn potentiometer
- 2 Sensitivity adjustment via teach button
- 3 Sensitivity adjustment via teach input
- 4 Housing colour: black RAL 9004
- 5 UL approval

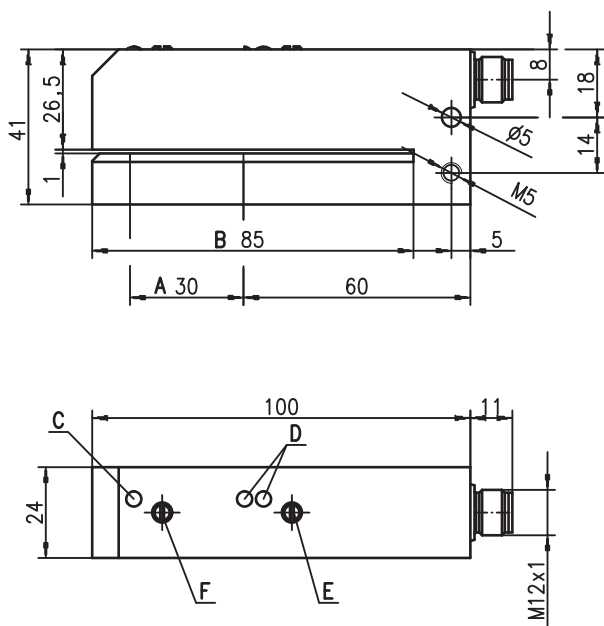
OVERVIEW OF CAPACITIVE FORKED SENSORS



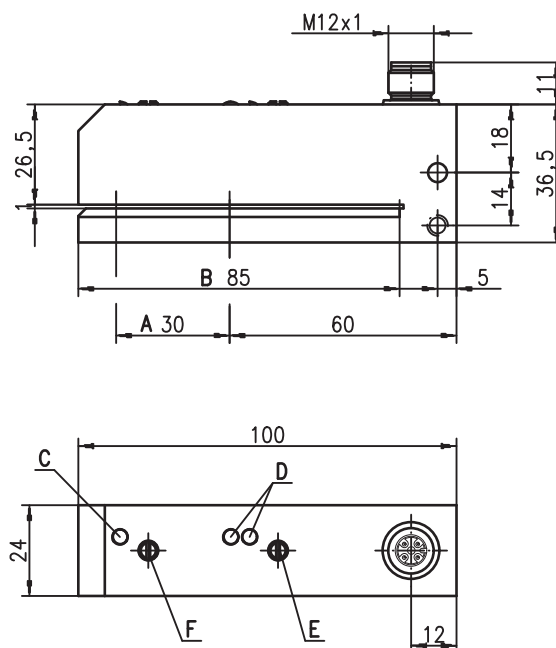
Detection of transparent labels

Dimensioned drawing

GK 14 / 24 L



GK 14 / 24 L.2



- A** Sensor
- B** Mouth depth
- C** Switching output indicator diode
- D** Base adjustment indicator diode
- E** Base adjustment
- F** Sensitivity adjustment (clockwise rotation = increase in sensitivity)



Further details can be found in the respective data sheet.



GS 04/21
Page 264



GS 06
Page 270



GK 14
Page 276



GSU 06/14B
Page 280

GK 14

Capacitive forked sensors	Mouth widths	Page
 Capacitive forked sensors GK 14	0.9 ± 0.1 mm	278

Additional products - forked sensors:

	Optical forked sensors	GS 04, GSL 04, GS 21	264
	Optical forked sensors	GS 06	270
	Ultrasonic forked sensors	GSU 06, GSU 14B	280
	Measuring CCD forked sensors	GS 754	240



Common technical data

Electrical data	Operating voltage U_B	10 ... 30VDC
	Residual ripple	≤ 15 % of U_B
	Open-circuit current	≤ 35mA
	Signal voltage high/low	≥ ($U_B - 2V$)/≤ 2V
Indicators	Yellow LED 1	Switching output
	Yellow LED 2	Base adjustment
Mechanical data	Housing	Aluminium, anodised
	Weight	175g
Environmental data	Ambient temperature (operation)	0°C ... +60°C
	VDE safety class	III
	Protection class	IP 65
	Standards applied	IEC 60947-5-2

Features

- Detection of paper and transparent labels
- Conveyor speeds up to 10m/s
- Attractive cost/performance ratio



Optical Sensor ABCs

Standard
Sensors

Measuring
Sensors

Ultrasonic
Sensors

Forked
Sensors

Special
Sensors

Fibre Optic
Sensors

Light
Curtains

Protective
Sensors

Ex
Sensors

AS-interface
Sensors

CAPACITIVE FORKED SENSORS

Part description Part No.:	Mouth width [mm]	Switching frequency	Sensor principle	Output	Switching	Response time	
Capacitive forked sensors							
GK 14 / 24 L 500 26371	0.9 ± 0.1	5000Hz	Capacitive	1 x NPN 1 x PNP	Light	0.1 ms	
GK 14 / 24 L.2 500 31714	0.9 ± 0.1	5000Hz	Capacitive	1 x NPN 1 x PNP	Light	0.1 ms	

We reserve the right to make changes • GK_14_GB.fm

Accessories / connection cables			More accessories can be found from page 364 onwards
Part No.	Designation	Features	
a 501 04556	K - D M12W - 5P - 2m - PVC	Connection cable 2000mm, M12 angular, 5-pin, PVC	
b 501 04555	K - D M12A - 5P - 2m - PVC	Connection cable 2000mm, M12 axial, 5-pin, PVC	
c 501 04558	K - D M12W - 5P - 5m - PVC	Connection cable 5000mm, M12 angular, 5-pin, PVC	
d 501 04557	K - D M12A - 5P - 5m - PVC	Connection cable 5000mm, M12 axial, 5-pin, PVC	
e 501 04560	K - D M12W - 5P - 10m - PVC	Connection cable 10000mm, M12 angular, 5-pin, PVC	
f 501 04559	K - D M12A - 5P - 10m - PVC	Connection cable 10000mm, M12 axial, 5-pin, PVC	

			
GS 04/21 Page 264	GS 06 Page 270	GK 14 Page 276	GSU 06/14B Page 280

GK 14

Capacitive forked sensors



Standard
Sensors

Measuring
Sensors

Ultrasonic
Sensors

Forked
Sensors

Special
Sensors

Fibre Optic
Sensors

Light
Curtains

Protective
Sensors

Ex
Sensors

AS-interface
Sensors

	Repeatability	Connection	Option	Accessories	
	± 0.20 mm	M12 connector	1, 2, 3	a, b, c, d, e, f	
	± 0.20 mm	M12 connector ¹⁾	1, 2, 3	a, b, c, d, e, f	

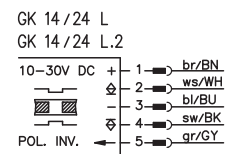
1) Plug outlet points upward



Optical Sensor ABCs

- Connection types Page 414
- Outputs Page 414

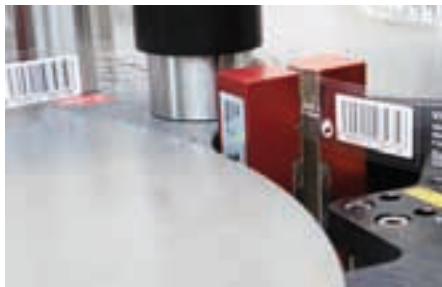
Electrical connection



Options

- 1 Sensitivity adjustment via potentiometer
- 2 Base adjustment via potentiometer
- 3 Inverting input for switching output signal

OVERVIEW OF ULTRASONIC FORKED SENSORS



Detection of transparent labels

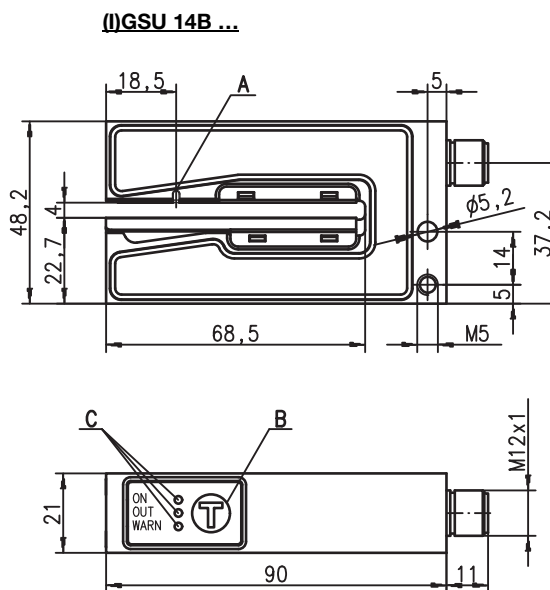
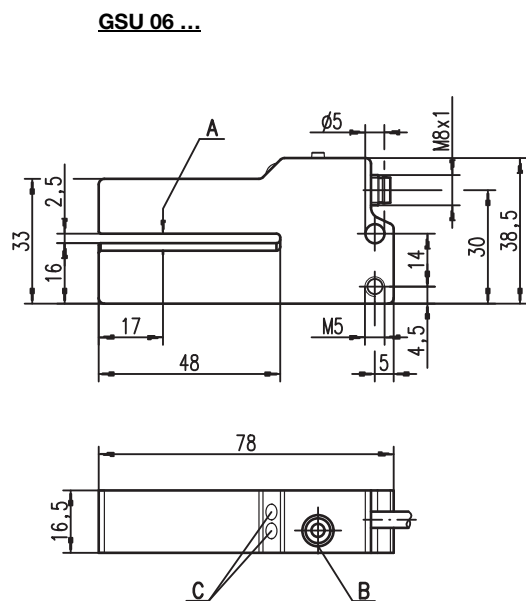


Detection of paper labels



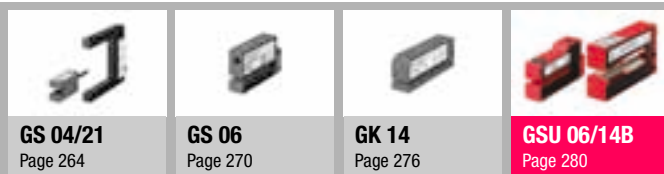
Detection of metallised labels

Dimensioned drawing



- A** Sensor marker (centre of label tape)
- B** Teach-in button
- C** Indicator diodes

 Further details can be found in the respective data sheet.



GSU 06 / (I)GSU 14B

Ultrasonic forked sensors	Mouth widths	Page
 Ultrasonic forked sensors GSU 06	2.5mm	282
 Ultrasonic forked sensors (I)GSU 14B	4mm	284

Additional products - forked sensors:

	Optical forked sensors	GS 04, GSL 04, GS 21	264
	Optical forked sensors	GS 06	270
	Capacitive forked sensors	GK 14	276
	Measuring CCD forked sensors	GS 754	240



Common technical data

Electrical data	Operating voltage U_B	10 ... 30/12 ... 30VDC
	Residual ripple	$\leq 15\%$ of U_B
	Open-circuit current	$\leq 40\text{mA}/\leq 70\text{mA}$
	Signal voltage high/low	$\geq (U_B - 2\text{V})/\leq 2\text{V}$
Indicators	Green LED	Ready/Teach-in
	Yellow LED	Switching point in the label gap
	Red LED	Teach/function error
Mechanical data	Housing	Aluminium, anodised
	Weight	60g / 160g
Environmental data	Ambient temperature (operation)	GSU 06: $+5^\circ\text{C} \dots +50^\circ\text{C}$ GSU 14B: $0^\circ\text{C} \dots +60^\circ\text{C}$
	VDE safety class	III
	Protection class	GSU 06: IP 62 GSU 14B: IP 65
	Standards applied	IEC 60947-5-2, UL 508

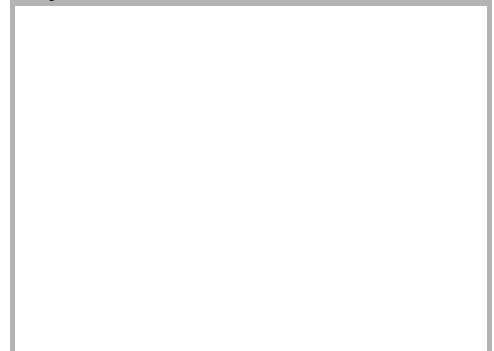
Mounting systems for this series can be found from page 374 onwards

Features

- Detection of paper, transparent and metallised labels
- Conveyor speeds up to 4m/s
- Simple adjustment via teach-in button or remote calibration



Optical Sensor ABCs



ULTRASONIC FORKED SENSORS

Part description Part No.:	Mouth width [mm]	Switching frequency ¹⁾	Sensor principle	Output	Switching	Response time	
Ultrasonic forked sensors							
GSU 06 / 4D.3 - 2 - S8 501 02921	2.5	2000 labels/min.	Ultrasonics	1 x PNP	Dark	0.15ms	
GSU 06 / 24 - 2 - S8 500 39638	2.5	2000 labels/min.	Ultrasonics	1 x NPN 1 x PNP	Light	0.15ms	
GSU 06 / 24 - 2 500 40191	2.5	2000 labels/min.	Ultrasonics	1 x NPN 1 x PNP	Light	0.15ms	
GSU 06 / 24D - 2 - S8 500 40190	2.5	2000 labels/min.	Ultrasonics	1 x NPN 1 x PNP	Dark	0.15ms	
GSU 06 / 24D.1 - 2 - S8 501 05735	2.5	2000 labels/min.	Ultrasonics	1 x NPN 1 x PNP	Dark	0.15ms	
GSU 06 / 24D - 2 500 40192	2.5	2000 labels/min.	Ultrasonics	1 x NPN 1 x PNP	Dark	0.15ms	
GSU 06 / 24D - 2, 200 - S12 501 08819	2.5	2000 labels/min.	Ultrasonics	1 x NPN 1 x PNP	Dark	0.15ms	

- 1) Dependent on conveyor speed, label length and label gap
2) Material dependent
3) When using right-angle plugs, cable outlet must point upward!

Accessories / connection cables			More accessories can be found from page 364 onwards
Part No.	Designation	Features	
a 501 04525	K - D M8W - 4P - 2m - PVC	Connection cable 2000mm, M8 angular, 4-pin, PVC	
b 501 04524	K - D M8A - 4P - 2m - PVC	Connection cable 2000mm, M8 axial, 4-pin, PVC	
c 501 04527	K - D M8W - 4P - 5m - PVC	Connection cable 5000mm, M8 angular, 4-pin, PVC	
d 501 04526	K - D M8A - 4P - 5m - PVC	Connection cable 5000mm, M8 axial, 4-pin, PVC	
e 501 04558	K - D M12W - 5P - 5m - PVC	Connection cable 5000mm, M12 angular, 5-pin, PVC	
f 501 04557	K - D M12A - 5P - 5m - PVC	Connection cable 5000mm, M12 axial, 5-pin, PVC	

			
GS 04/21 Page 264	GS 06 Page 270	GK 14 Page 276	GSU 06/14B Page 280

GSU 06

Ultrasonic forked sensors



Standard
Sensors

Measuring
Sensors

Ultrasonic
Sensors

Forked
Sensors

Special
Sensors

Fibre Optic
Sensors

Light
Curtains

Protective
Sensors

Ex
Sensors

AS-interface
Sensors

	Repeatability ²⁾	Connection	Option	Accessories	
	±0.3mm	M8 connector ³⁾	1, 2, 4	a, b, c, d	
	±0.3mm	M8 connector	1, 4	a, b, c, d	
	±0.3mm	Cable, 2m	1, 2, 4		
	±0.3mm	M8 connector	1, 4	a, b, c, d	
	±0.3mm	M8 connector	3, 4	a, b, c, d	
	±0.3mm	Cable, 2m	1, 2, 4		
	±0.3mm	Cable, 0.2m, with M12 connector	1, 2, 4	e, f	

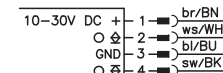


Optical Sensor ABCs

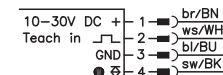
- Connection types Page 414
- Outputs Page 414

Electrical connection

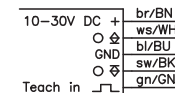
GSU 06/24-2-S8



GSU 06/4 D.3-2-S8

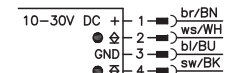


GSU 06/24-2

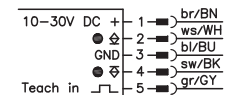


GSU 06/24 D-2-S8

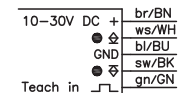
GSU 06/24 D.1-2-S8



GSU 06/24 D-2, 200-S12



GSU 06/24 D-2



Options

- 1 Teach-in via teach button
- 2 Teach-in via teach input
- 3 Forked sensor for tape-tear monitoring
- 4 UL approval

ULTRASONIC FORKED SENSORS

Part description Part No.:	Mouth width [mm]	Conveyor speed [m/min.]	Sensor principle	Output	Switching	Response time	
Ultrasonic forked sensors							
IGSU 14B / 6.3 - S12 501 09276	4	≤ 240	Ultrasonics	1xPush-pull/DC	Light/dark antivalent	≤ 200µs	
IGSU 14B / 6D.3 - S12 501 09277	4	≤ 240	Ultrasonics	1xPush-pull/DC	Dark/light antivalent	≤ 200µs	
GSU 14B / 66.3 - S12 501 09498	4	≤ 240	Ultrasonics	2xPush-pull/DC	Light/dark antivalent	≤ 200µs	
GSU 14B / 66D.3 - S12 501 09499	4	≤ 240	Ultrasonics	2xPush-pull/DC	Dark/light antivalent	≤ 200µs	

Accessories / connection cables			More accessories can be found from page 364 onwards
Part No.	Designation	Features	
a 501 04556	K - D M12W - 5P - 2m - PVC	Connection cable 2000mm, M12 angular, 5-pin, PVC	
b 501 04555	K - D M12A - 5P - 2m - PVC	Connection cable 2000mm, M12 axial, 5-pin, PVC	
c 501 04558	K - D M12W - 5P - 5m - PVC	Connection cable 5000mm, M12 angular, 5-pin, PVC	
d 501 04557	K - D M12A - 5P - 5m - PVC	Connection cable 5000mm, M12 axial, 5-pin, PVC	
e 501 04559	K - D M12A - 5P - 10m - PVC	Connection cable 10000mm, M12 axial, 5-pin, PVC	
f 501 09579	Extended carriage	Extended guide rail for GSU 14B, 260mm long	

			
GS 04/21 Page 264	GS 06 Page 270	GK 14 Page 276	GSU 06/14B Page 280

(I)GSU 14B
Ultrasonic forked sensors



Standard
Sensors

Measuring
Sensors

Ultrasonic
Sensors

Forked
Sensors

Special
Sensors

Fibre Optic
Sensors

Light
Curtains

Protective
Sensors

Ex
Sensors

AS-interface
Sensors

	Repeatability ¹⁾	Connection	Option	Accessories	
	±0.2mm	M12 connector ³⁾	1, 2, 3, 4, 5, 6	a, b, c, d, e, f	
	±0.2mm	M12 connector	1, 2, 3, 4, 5, 6	a, b, c, d, e, f	
	±0.2mm	M12 connector	1, 2, 6	a, b, c, d, e, f	
	±0.2mm	M12 connector	1, 2, 6	a, b, c, d, e, f	

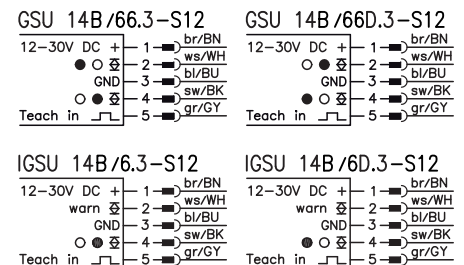
1) Depending on material, conveyor speed, label length and spacing between labels



Optical Sensor ABCs

- Connection types Page 414
- Outputs Page 414

Electrical connection



Options

- 1 Teach-in via teach button
- 2 Teach-in via teach input
- 3 *easyTeach* function
- 4 ALC (auto level control) - online optimisation of the switching threshold
- 5 Warning output
- 6 UL approval (class 2 acc. to NEC)