FORKS 2013

Micro Detectors
Italian Sensors Technology

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Italian Sensors Technology

THE NEW
MD STANDARD

FinMasi Group Company

FINMASI GROUP

PHOTOELECTRIC SENSORS

A complete offer comprising optical and ultrasonic forks as the solution of YOUR APPLICATIONS :

OBJECTS DETECTION or EDGE DETECTION :

Optical Forks FC5: easy, robust, plug & play

Optical Forks FC6: infrared and LASER emission, with potentiometer by buttoms

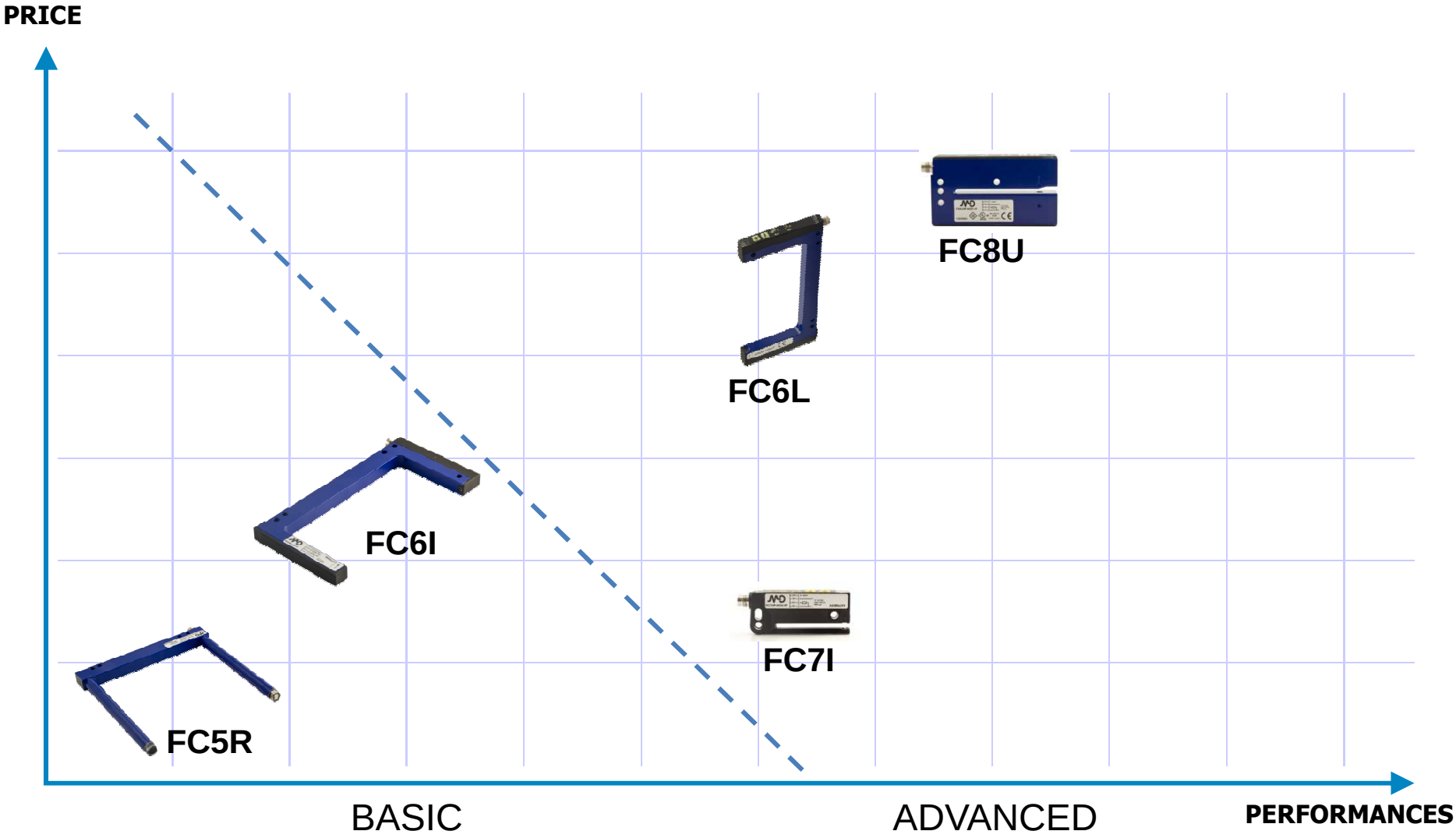
LABELS DETECTION :

Optical Forks FC7: smart fork for label detection

Ultrasonic Forks FC8: for transparent label detection

		Label material		
Sensors	base material	PAPER	TRANSPARENT	METALLIZED
OPTICAL	PAPER/TRANSPARENT	☺		
ULTRASONIC	PAPER/TRANSPARENT	☺	☺	☺

MARKET POSITION



FC 5

PRODUCT HIGHLIGHTS

Plug and Play without adjustment
High power RED LED emission
Minimum size object detection **0,8 mm**
Metal *housing*
Led Indicator **high Visibility**
Switching frequency **4KHz**
M8 *connectors 3pins*
IP67 *mechanical protection*
3 *wires:* **PNP** or **NPN, Do** or **Lo**
-10°C...+60°C operating temperature range

Forks width 50, 80, 120mm
Forks depth 60, 120mm

TECHNICAL DATA

PARAMETERS	DATA
Width (mm)	50mm/ 80mm/ 120mm
Depth (mm)	60mm/ 120mm
Emission	Red HIGH POWER (660 nm)
Adjustment	None
Operating voltage	10 – 30 Vdc
No-load current	< 20 mA (Val=30V)
Output current	100 mA
Leakage current	≤10 µA (VDC max)
Output voltage drop	1,5 V max. (Il=100mA)
Output type	NPN or PNP Lon/Don
Switching frequency	4 KHz
Time delay before availability	140 ms
Supply electrical protections	Polarity reversal, transient
Output electrical protections	Short circuit (autoreset)
Operative Temperature range	-10 °C /+60 °C
Storage Temperature	-40 °C /+80 °C
protection degree	IEC IP67 (EN60529)
Interference to external light	5000lux (incandescent lamp); 10000lux (sunlight)
LED indicators	Yellow : light state
Housing Material	Alluminium
Weight	80gr …150gr

CODE STRUCTURE

FC5R/DN-0506-1F

EMISSION
R = Red emission

STATE
L = light ON
D = dark ON

WIDTH
05 = 50mm
08 = 80mm
12 = 120mm

HOUSING
1 = Metal

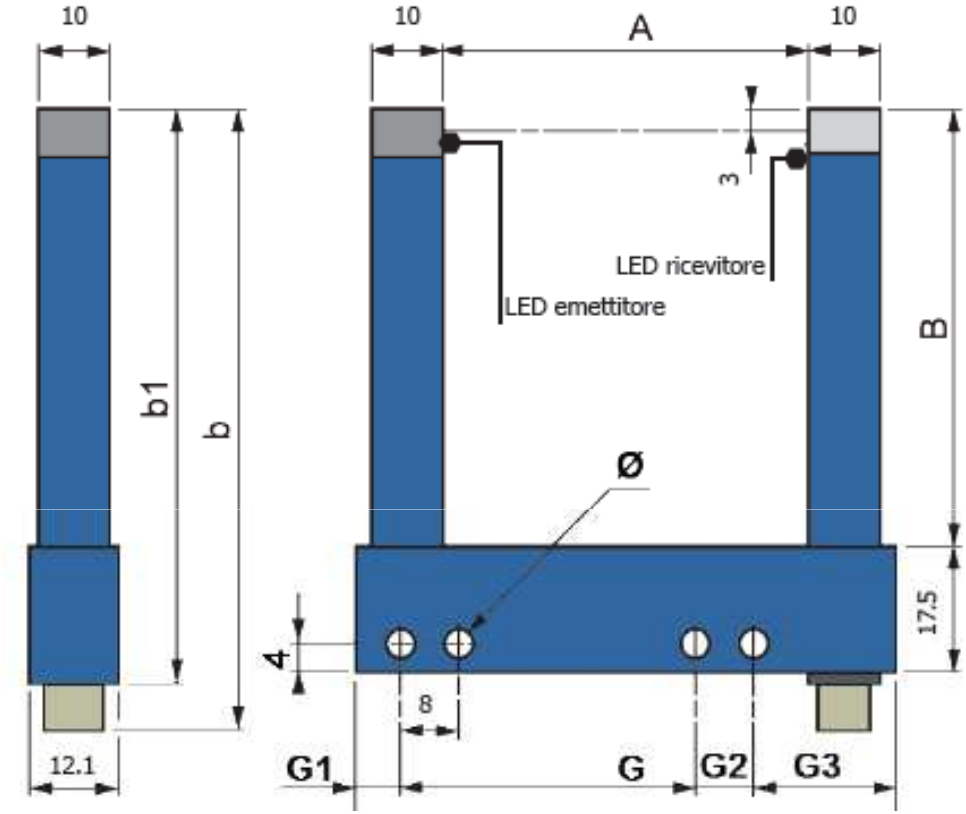
CONNECTION
F = Plug M8(3pin)

OUTPUT
P = PNP
N = NPN

DEPTH
06 = 60mm
12 = 124mm

Code Available			
FC5R/DN-0506-1F	FC5R/LN-0506-1F	FC5R/DP-0506-1F	FC5R/LP-0506-1F
FC5R/DN-0806-1F	FC5R/LN-0806-1F	FC5R/DP-0806-1F	FC5R/LP-0806-1F
FC5R/DN-1212-1F	FC5R/LN-1212-1F	FC5R/DP-1212-1F	FC5R/LP-1212-1F

MECHANICAL DIMENSIONS

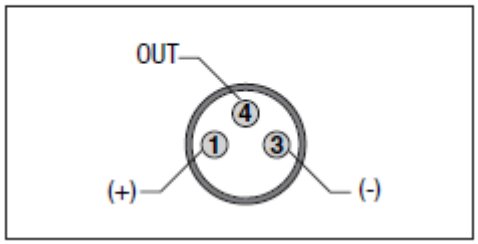


models	width slit detection	depth slit detection	a	b	b1	G	G1	G2	G3	Ø
FC5R/**-0506-1F	50	60	74	85.7	77.5	40	6.5	19.5	4 x 4.3	4 x 4.3
FC5R/**-0806-1F	80	60	104	85.7	77.5	70	6.5	19.5	4 x 4.3	4 x 4.3
FC5R/**-1212-1F	120	124.3	144	150.2	142	100	17	17	4 x 4.3	4 x 4.3

FC5R

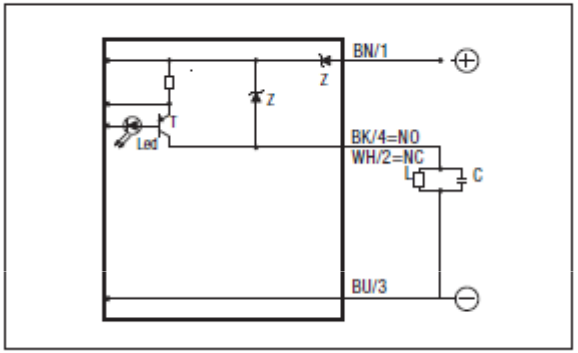
Connettore - *Plug*

M8

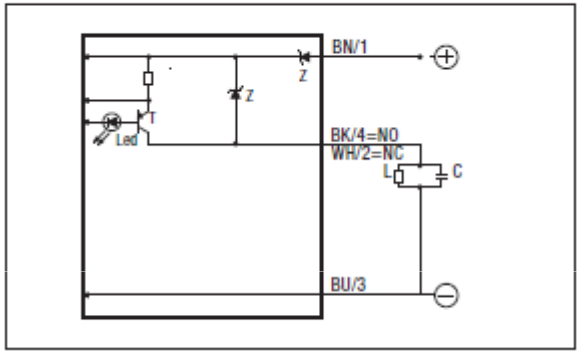


Schemi elettrici – *Electrical diagrams*

Schema di collegamento PNP
Wiring diagram PNP

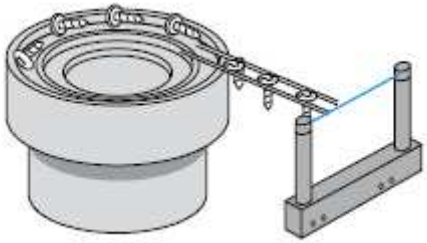


Schema di collegamento NPN
Wiring diagram NPN

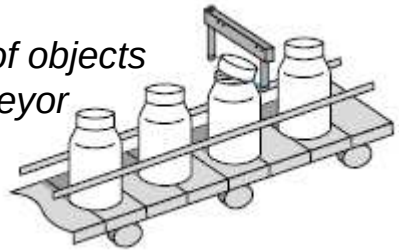


Applicazioni - *Application*

Vibrating bowl



Monitoring height of objects Passing on a conveyor



SALES ARGUMENTS

FC6I

PRODUCT HIGHLIGHTS

Simple and accurate **adjustment manually by -/+ buttons**
Infrared *emission*
Metal *housing*
Light/Dark *switching, selectable by button*
Minimum size object detection **0,2 mm**
Switching frequency **10KHz**
M8 *connectors (4pins):* **PNP/NPN, Lo/Do**
IP65 *mechanical protection*
-20°C...+60°C *operating temperature range*

Forks width 30, 50, 80, 120mm
Forks depth 42, 59mm

TECHNICAL DATES

PARAMETERS	DATA
Width (mm)	30mm/ 50mm/ 80mm/ 120mm
Depth (mm)	42mm/ 59mm
Emission	Infrared (660 nm)
Adjustment	Manually "+/-" buttons
Minumum Object size detection	0,2mm
Operating voltage	10 – 30 Vdc
No-load current	< 40 mA (Val=30V)
Output current	100 mA
Output voltage drop	2 V max. (Il=100mA)
Output type	NPN /PNP Lon/Don
Switching frequency	10 KHz
Time delay before availability	100 ms
Supply electrical protections	Polarity reversal, transient
Output electrical protections	Short circuit (autoreset)
Operative Temperature range	-20 °C /+60 °C
Storage Temperature	-40 °C /+80 °C
protection degree	IEC IP65 (EN60529)
Interference to external light	5000lux (incandescent lamp); 10000lux (sunlight)
LED indicators	Yellow : light state
Housing Material	Alluminium
Weight	45gr …150gr

CODE STRUCTURE

FC6I/0B-0506-1F

EMISSION
I= infrared

STATE
0=(Lo/Do selectable)

OUTPUT
B = PNP/NPN

WIDTH
03 = 30mm
05 = 50mm
08 = 80mm
12 = 120mm

DEPTH
04 = 42mm
06 = 59mm

HOUSING
1 = Metal

CONNECTION
F = Plug M8 (4pin)

Code Available
FC6I/0B-0304-1F
FC6I/0B-0506-1F
FC6I/0B-0806-1F
FC6I/0B-1206-1F

FC6L

PRODUCT HIGHLIGHTS

Simple and accurate **adjustment manually by -/+ buttons**
LASER *emission (Class 1 laser)*
Minimum size object detection **0,05 mm**
Metal *housing*
Light/Dark *switching, selectable by button*
Switching frequency **10KHz**
M8 *connectors (4pins):* **PNP/NPN, Lo/Do**
IP65 *mechanical protection*
-20°C...+50°C *operating temperature range*

Forks width 30, 50, 80, 120mm
Forks depth 42, 59mm

PENDING

TECHNICAL DATES

PARAMETERS	DATA
Width (mm)	30mm/ 50mm/ 80mm/ 120mm
Depth (mm)	42mm/ 59mm
Emission	Laser (670nm), Class 1 laser
Adjustment	Manually "+/-" buttons
Minumum Object size detection	0,05mm
Operating voltage	10 – 30 Vdc
No-load current	< 40 mA (Val=30V)
Output current	100 mA
Output voltage drop	2 V max. (Il=100mA)
Output type	NPN /PNP Lon/Don
Switching frequency	10 KHz
Time delay before availability	100 ms
Supply electrical protections	Polarity reversal, transient
Output electrical protections	Short circuit (autoreset)
Operative Temperature range	-20 °C /+50 °C
Storage Temperature	-40 °C /+80 °C
protection degree	IEC IP65 (EN60529)
Interference to external light	5000lux (incandescent lamp); 10000lux (sunlight)
LED indicators	Yellow : light state
Housing Material	Alluminium
Weight	45gr …150gr

PENDING

CODES STRUCTURE

FC6L/0B-0506-1F

EMISSION
L= Laser
(Class 1 Laser)

STATE
0=(Lo/Do selectable)

OUTPUT
B = PNP/NPN

WIDTH
03 = 30mm
05 = 50mm
08 = 80mm
12 = 120mm

DEPTH
04 = 42mm
06 = 59mm

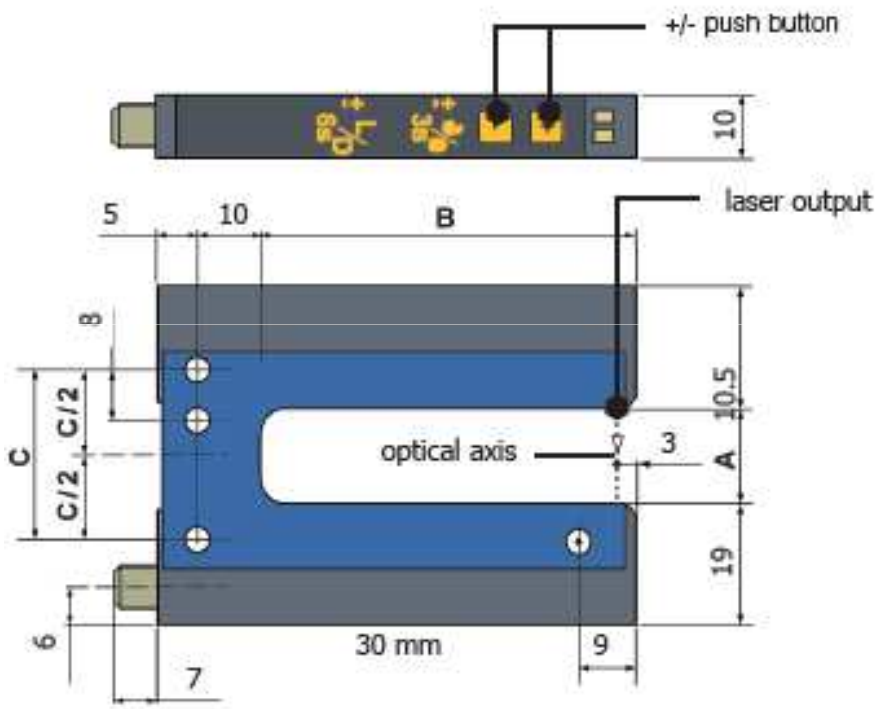
HOUSING
1 = Metal

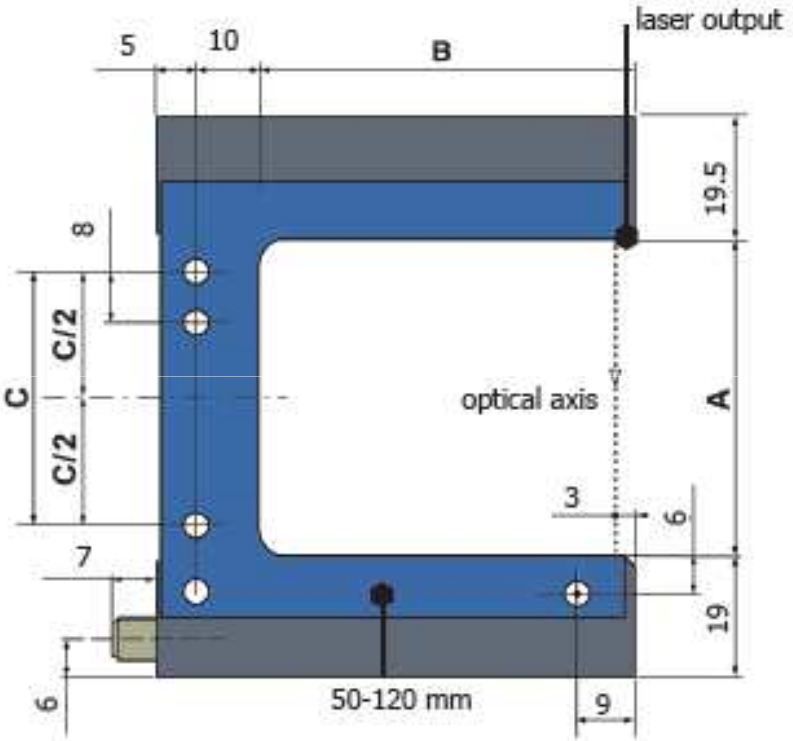
CONNECTION
F = Plug M8 (4pin)

Code Available
FC6L/0B-0304-1F
FC6L/0B-0506-1F
FC6L/0B-0806-1F
FC6L/0B-1206-1F

PHOTOLECTRIC SENSORS

FC6L/**-**-**

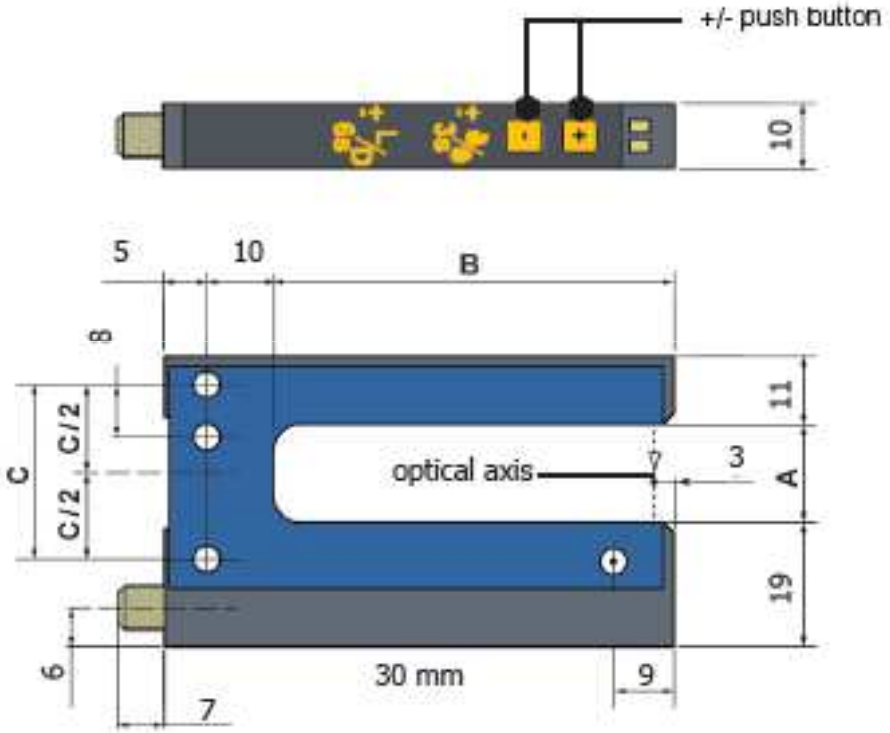


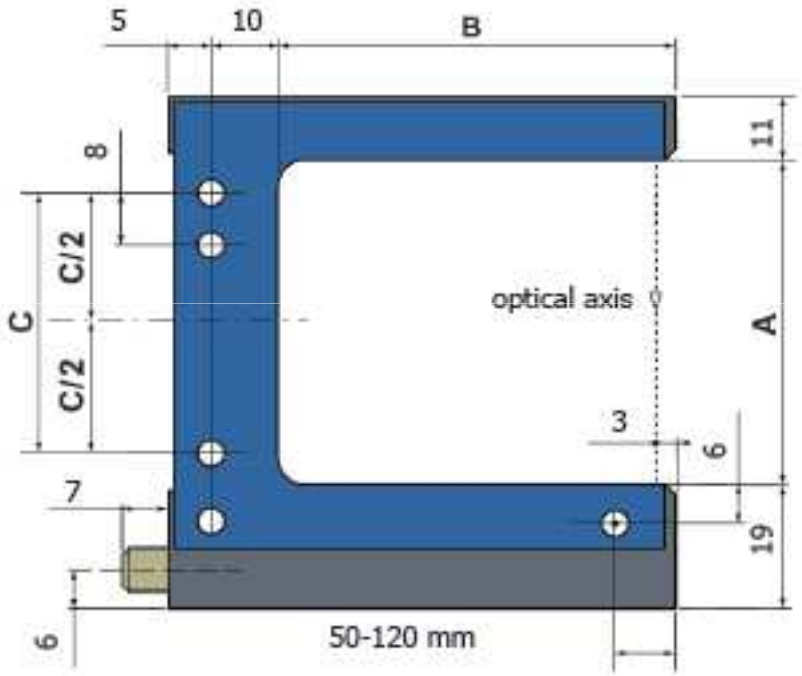


code	A mm	B mm	C mm
FC6*/**-03*-**	30	42	42
FC6*/**-05*-**	50	59	40
FC6*/**-08*-**	80	59	70
FC6*/**-12*-**	120	59	110

PHOTOLECTRIC SENSORS

FC6V**-**-**

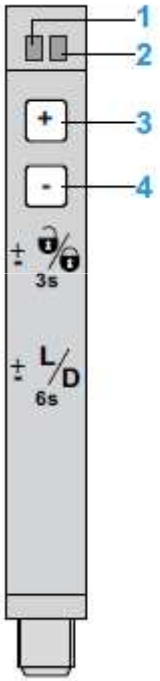




code	A mm	B mm	C mm
FC6*/**-03*-**	30	42	42
FC6*/**-05*-**	50	59	40
FC6*/**-08*-**	80	59	70
FC6*/**-12*-**	120	59	110

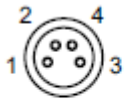
FC6I and FC6L

Pulsanti di settaggio/– *Setting botton*



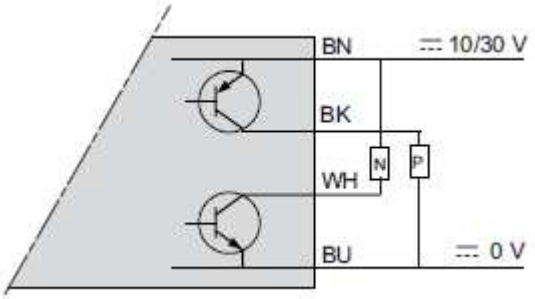
1	Yellow LED "ON": Output activated
2	Red LED "ON": Adjustments and keypad locking
3, 4	Sensitivity adjustment
3 + 4	Keypad locking (3 s ⩽ press time < 6 s)
3 + 4	NO/NC (press time ⩾ 6 s)

Connettore – *Plug M8 4pins*



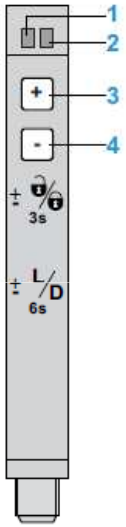
Pin n° - colour
1 BN: Brown
2 WH: White
3 BU: Blue
4 BK: Black

Schemi elettrici – *Electrical diagrams*



FC6I and FC6L

Settaggio/– *Setting*



⊗ Off / éteinte / Aus ✲ On / Allumée / Ein ✲ Blinking / Clignotante / Blinkend ✲ Blinks slowly / Clignote lentement / Langsam blinkend

en / fr / de	Action / Action / Aktion	Red LED / DEL rouge	Yellow LED / DEL jaune
Sensitivity adjustemnt / Réglage de sensibilité / Einstellung der Empfindlichkeit			
1 Step by step Pas à pas Einzelschritts	⊕ / ⊖		ON/OFF when threshold is passed upward of downward / Allumée/éteinte en cas de dépassement du seuil (vers le haut ou le bas) / EIN/AUS bei Über- oder Unterschreitung des Schwellenwerts
Fast Rapid Schnell	⊕ / ⊖ t > 2 s	It stays ON when the limit threshold is reached / Reste allumé lorsque le seuil limite est atteint / **Bleibt EIN wenn der Grenzschwellwert erreicht ist** → 2 s	
Locking/Unlocking keyboard / Verrouillage/déverrouillage clavier / Tastatursperre/-freigabe			
2 Locking / Verrouillage / Sperre	& 3 s < t < 6 s	Release the buttons / Relâcher les boutons / Tasten loslassen 3 s	–
Keyboard locked/Clavier verrouillé/Tastature gesperrt	–	✲	–
Unlocking / Déverrouillage / Freigabe	& 3 s < t < 6 s	Release the buttons / Relâcher les boutons / Tasten lollassen 3 s	–
Keyboard unlocked / Clavier déverrouillé / Tastatur freigegeben (entsperrt)	–	⊗	–
Output signal / Signal de sortie / Ausgangsignal			
3 Switching NO/NC function / Commutation fonction NO/NC / **Umschaltung NO/NC-Funktion**	& > 6 s	✲	OFF (No Label) / AUS (Kein Etikett): NO, NC — ON (Label) / EIN (Kein Etikett): NO, NC

COMPETITORS BENCHMARK

	MD Micro Detectors	MD Micro Detectors	BANNER	Allen-Bradley	BALLUFF	IFM	DI-SORIC	DI-SORIC	LEUZE
									
PARAMETERS	**FC5R**	**FC6I**	**SLM**	**45LSP**	**BGL**	**OPU**	**OGU**	**OGUTI**	**GS 04**
Width (mm)	50/ 80/ 120	30/ 50/ 80/ 120	10/ 20/30/ 50/ 80/ 120/ 150/180/220	30/ 50/ 80/ 120	5/10/ 20/30/ 50/ 80/ 120/180/220	20/30/ 50/ 80/ 120	2/5/10/20/30/40/50/60/70/80/90/100/ 120/170/220/250	2/5/30/50/80/120	8/30/50/80/120/ 220
Depth (mm)	60/ 120	42/ 59	60,8/ 120,7	34/ 54	17/24/34/ 54/114	25/ 35/ 55/ 60	25/ 35/ 55/ 60/110	25/ 35/ 55/ 60/110	17/24/34/54/114
Emission	Red HIGH POWER (660 nm)	Infrared	Infrared	Red	Red	Red	Infrared/red	Infrared/red	Infrared/red
Adjustment	None	manually "+/-" button	potentiometer	teach-in	potenziometer	potenziometer	potenziometer	auto-teach	auto-teach
Minimum object detected	0,8-1mm	0,2mm	0,3mm/1mm	0,2mm	0,3mm	0,4mm	0,3/0,5mm	0,3/0,5mm	0,3/0,5mm
Operating voltage	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 35 Vdc	10 – 35 Vdc	10 – 35 Vdc	10 – 35 Vdc
No-load current	< 20 mA (Val=30V)	< 40 mA (Val=30V)	< 25 mA (Val=30V)	< 25 mA (Val=30V)	< 25 mA (Val=30V)	< 30 mA (Val=30V)	< 30 mA (Val=30V)	< 30 mA (Val=30V)	< 30 mA (Val=30V)
Output current	100 mA	100 mA	100 mA	100 mA	100 mA	200 mA	200 mA	200 mA	200 mA
Output voltage drop	1,5 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)
Output type	NPN or PNP, Lo or Do	NPN / PNP, Lo/Do	NPN / PNP, Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)
Switching frequency	4 KHz	10 KHz	2 kHz	4 kHz	3 kHz	4 kHz	4 kHz	3/1,5 kHz	3/1,5 kHz
Operative Temperature range	-10 °C /+60 °C	-20 °C /+60 °C	-20 °C /+60 °C	-20 °C /+60 °C	-20 °C /+60 °C	-25 °C /+60 °C	-25 °C /+60 °C	-10 °C /+60 °C	-10 °C /+60 °C
protection degree	IP67	IP65	IP67	IP67	IP67	IP67	IP67	IP67	IP65
Housing Material	Alluminium	Alluminium	Alluminium	PC	GDZn	GDZn	GDZn	GDZn	GDZn
Connection	M8 3pin	M8 4pin	M8 4pin/3pin	M8 4pin/3pin	M8 4pin/3pin	M8 4pin/3pin	M8 4pin/3pin	M8 4pin/3pin	M8 4pin/3pin

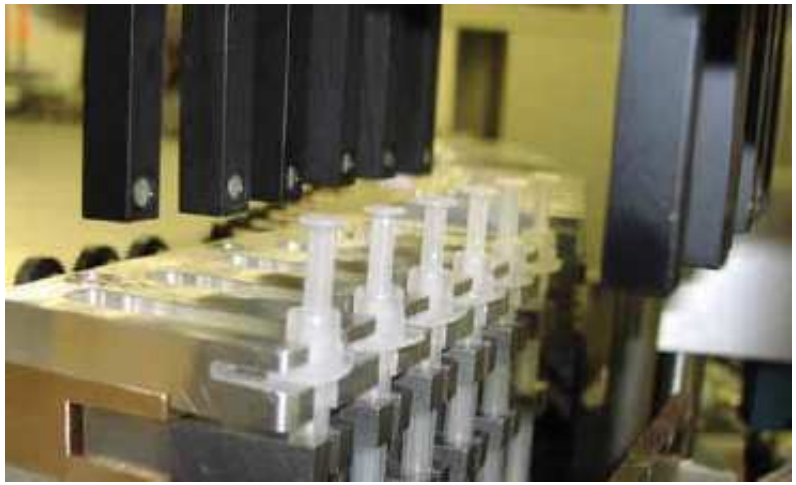
COMPETITORS BENCHMARK

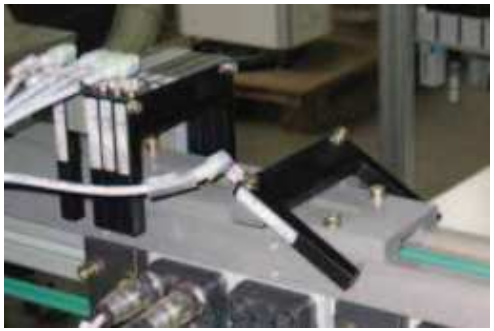
	MD Micro Detectors	BAUMER	BALLUFF	P & F	DI-SORIC	DI-SORIC	WENGLOR	SICK
								
PARAMETERS	**FC6L**	**OGUM**	**BGL**	**GL**	**LGUP**	**LGU**	**YH**	**WFL**
Width (mm)	30/ 50/ 80/ 120	30/50/80/120	5/10/20/30/50/80/ 120/180/220	30/50/80/120/220	30/50/80/120/220	30/50/80/120	30/80	2/ 5 /15/ 30/ 50/ 80/ 120
Depth (mm)	42/ 59	35/55/60	17/24/ 34/ 54/114	35/ 55	35/ 55/60	35/55/60	55	42/ 59/95
Emission	Laser	Laser	Laser	Laser (laser class2)	Laser	Laser	Laser (laser class2)	Laser
Adjustment	manually "+/-" button	potenziometer	potenziometer	potenziometer	potenziometer	potenziometer	teach-in	manually "+/-" button or teach-in
Minimum object detected	0,05mm	0,05mm	0,02/0,04/0,06/ 0,08/mm	0,05mm	0,05mm	0,05mm	0,05 mm	0,05mm
Operating voltage	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 35 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc
No-load current	< 40 mA (Val=30V)	< 30 mA (Val=30V)	< 35 mA (Val=30V)	< 45 mA (Val=30V)	< 30 mA (Val=30V)	< 30 mA (Val=30V)	< 50 mA (Val=30V)	< 40 mA (Val=30V)
Output current	100 mA	200 mA	100 mA	100 mA	100 mA	200 mA	200 mA	100 mA
Output voltage drop	2 V max. (Il=100mA)	2,8 V max. (Il=100mA)	2,6 V max. (Il=100mA)	2,5 V max. (Il=100mA)	2,8 V max. (Il=100mA)	2,8 V max. (Il=100mA)	1,5 Vmax	2 V max. (Il=100mA)
Output type	NPN / PNP, Lo/Do	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	NPN / PNP, Lo/Do
Switching frequency	10 KHz	3 kHz	3/1,5 kHz	10 kHz	3 kHz	3 kHz	10 kHz	10 KHz
Operative Temperature range	-20 °C /+50 °C	5 °C /+45 °C	-10 °C /+60 °C	-10 °C /+60 °C	0 °C /+50 °C	5 °C /+45 °C	-25 °C /+60 °C	-20 °C /+60 °C
protection degree	IP65	IP67	IP67	IP67	IP67	IP67	IP67	IP65
Housing Material	Alluminium	GDZn	GDZn	GDZn	GDZn	GDZn	GDZn	Alluminium
Connection	M8 4pin	M8 3pin	M8 3pin	M8 3pin	M8 3pin	M8 3pin	M8 3pin	M8 4pin
Note						Amb. Light Amb. > 40 klux	Off. Delay 0,,100ms	

MARKET SECTORS

MAIN APPLICATIONS

- Packaging lines
- Automatic machine
- Automotive
- Elettronic industry

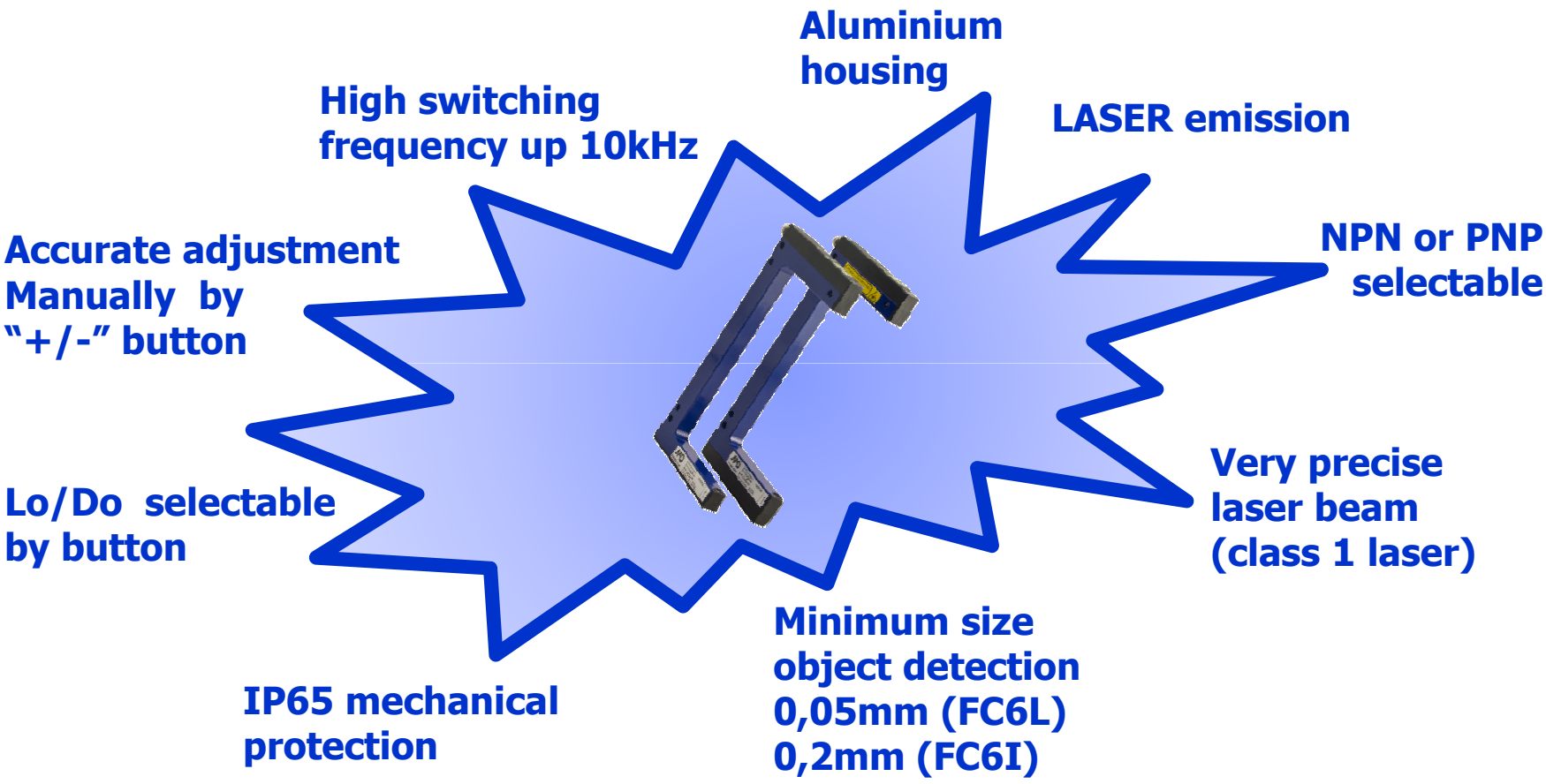




APPLICATIONS EXAMPLE

- Reliable detection of high-speed moviments
- Detection of small parts with an object size as small as a 0,2mm or 0,05mm for LASER forks
- Countour checking
- Through control
- Egde control
- Positioning of robot arms
- Counting a very smart parts
- Checking of micro assembling
- Feed control on assembling lines

SALES ARGUMENTS



FC7I

PRODUCT HIGHLIGHTS

Dinamic teach-in or control panel and *manual adjstment* with "+/-" buttons
Infrared *emission*
Minimum object detection **2 mm** (Gap between *Label*), **2mm** (label Size)
PA *housing*
Light/Dark switching, selectable by button
Switching frequency **10KHz**
M8 *connectors* (**4**pins): **PNP** or **NPN**, **Lo/Do**
IP65 *mechanical protection*
-20°C...+60°C operating temperature range

Forks width 3 mm
Forks depth 42 mm

TECHNICAL DATES

PARAMETERS	DATA
Width (mm)	3 mm
Depth (mm)	42mm
Emission	Infrared
Adjustment	Manually "+/-" buttons or Teach-in (dinamic)
Minumum Object size detection	2mm (Gap between labels) 2mm (Size of labels)
Operating voltage	10 – 30 Vdc
No-load current	< 20 mA (Val=30V)
Output current	100 mA
Output voltage drop	2 V max. (Il=100mA)
Output type	NPN or PNP Lon/Don
Switching frequency	10 KHz
Time delay before availability	100 ms
Supply electrical protections	Polarity reversal, transient
Output electrical protections	Short circuit (autoreset)
Operative Temperature range	-20 °C /+60 °C
Storage Temperature	-30 °C /+80 °C
protection degree	IEC IP65 (EN60529)
Interference to external light	5000lux (incandescent lamp); 10000lux (sunlight)
LED indicators	Yellow : light state
Housing Material	PA
Weight	36 gr

CODE STRUCTURE

FC7I/0P-M304-0F

EMISSION
I=Infrared

STATE
0=(Lo/Do selectable)

OUTPUT
P = PNP
N = NPN

DEPTH
04 = 42mm

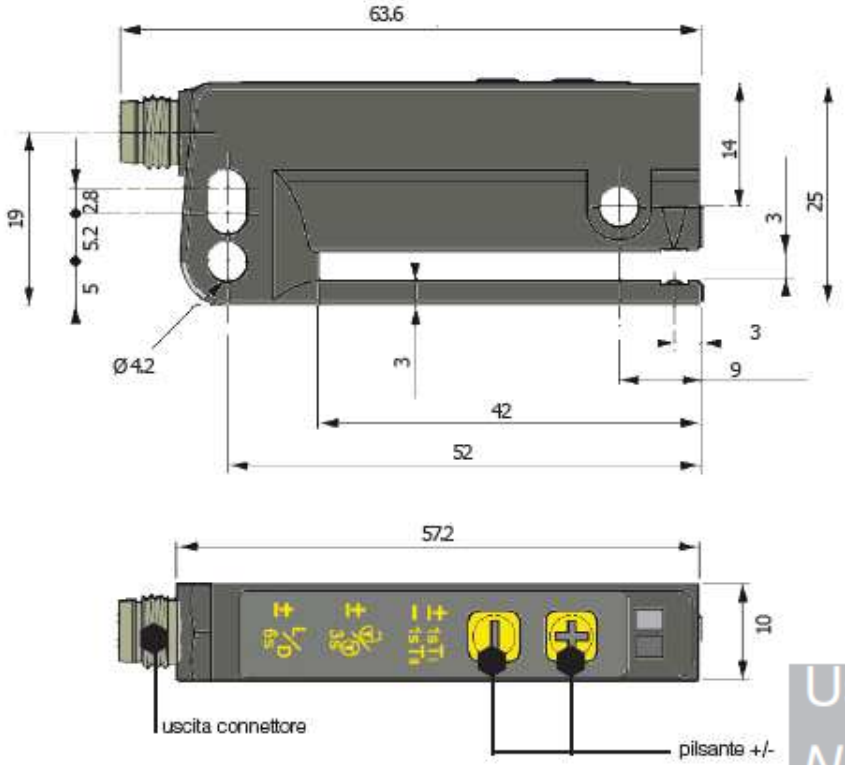
WIDTH
M3 = 3mm

HOUSING
0 = Plastic

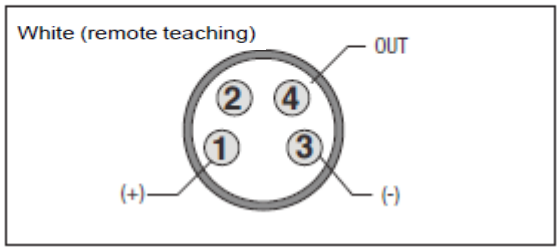
CONNECTION
F = Plug M8 (4pin)

Code Available
FC7I/0P-M304-0F
FC7I/0N-M304-0F

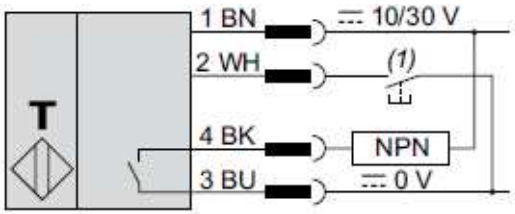
MECHANICAL DIMENSION



M8 – 4 pin

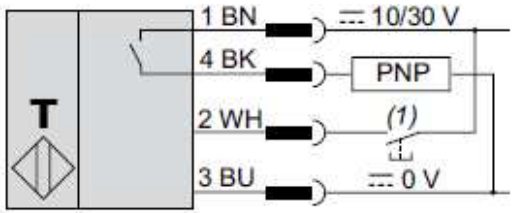


Uscita NPN
*NPN output**



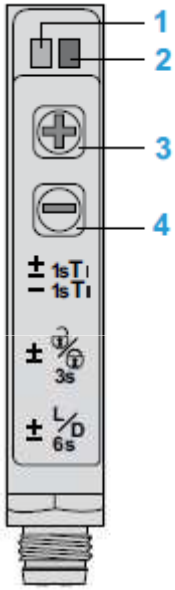
(1) Remote teaching.

Uscita PNP
*PNP output**

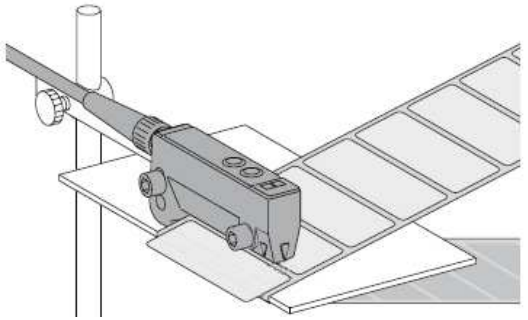


(1) Remote teaching.

PHOTOLECTRIC SENSORS

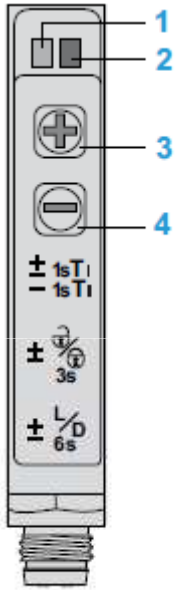


1	Yellow LED "ON": Output activated
2	Red LED "ON": Adjustments and keypad locking
3, 4	Sensitivity adjustment
3 + 4	Teach mode and automatic adjustment of sensitivity (press time < 3 seconds)
3 + 4	Keypad locking (3 s ⩽ press time < 6 s)
3 + 4	NO/NC (press time ⩾ 6 s)



Micro Detectors
Italian Sensors Technology

Settaggio/Setting



Off / éteinte / Aus · On / Allumée / Ein · Blinking / Clignotante / Blinkend · Blinks slowly / Clignote lentement / Langsam blinkend

	en / fr / de	Action / Action / Aktion	Red LED / DEL rouge	Yellow LED / DEL jaune
	Dynamic teach / Apprentissage dynamique			
1	Or external teach / ou apprentissage externe / **oder externes Teach-In**	& < 3 s	8 Hz / 4 Hz	ON/OFF according to the old threshold / Allumé/éteint suivant le seuil précédent / EIN/AUS je nach altem Schwellenwert
2	Or external teach / ou apprentissage externe / oder externes Teach-In		3 x 1 Hz not enough signal/ signal insuffisant/nicht ausreichendes Signal; ⊗ Dynamic teach done/ Apprentissage dynamique terminé/ Dynamisches Teach-In abgeschlossen	ON/OFF according to the old threshold / Allumé/éteint suivant le seuil précédent / EIN/AUS je nach altem Schwellenwert
	Sensitivity adjustemnt / Réglage de sensibilité / Einstellung der Empfindlichkeit			
3	Step by step / Pas à pas / **Einzelschritts**			**ON/OFF when threshold is passed upward of downward / Allumée/éteinte en cas de dépassement du seuil (vers le haut ou le bas) / EIN/AUS bei Über- oder Unterschreitung des Schwellenwerts**
	Fast / Rapid / Schnell	t > 2 s	It stays ON when the limit threshold is reached / Reste allumé lorsque le seuil limite est atteint / **Bleibt EIN wenn der Grenzschwellwert erreicht ist** → 2 s	
	Locking/Unlocking keyboard / Verrouillage/déverrouillage clavier / Tastatursperre/-freigabe			
	Locking / Verrouillage / Sperre	& 3 s < t < 6 s	Release the buttons / Relâcher les boutons / Tasten loslassen 3 s	–
4	Keyboard locked/Clavier verrouillé/Tastatur gesperrt	–		–
	Unlocking / Déverrouillage / Freigabe	& 3 s < t < 6 s	Release the buttons / Relâcher les boutons / Tasten lollassen 3 s	–
	Keyboard unlocked / Clavier déverrouillé / Tastatur freigegeben (entsperrt)	–	⊗	–
	Output signal / Signal de sortie / Ausgangsignal			
5	Switching NO/NC function / Commutation fonction NO/NC / **Umschaltung NO/NC-Funktion**	& > 6 s		OFF (No Label) / AUS (Kein Etikett) NO NC; ON (Label) / EIN (Kein Etikett) NO NC

BENCHMARKET COMPETITORS

	MD Micro Detectors	LEUZE	LEUZE	SICK	DI-SORIC
					
PARAMETERS	**FC7**	**GS 61**	**GS 63**	**WFS**	**OGUTI 005/50**
Width (mm)	3	3	3	3	5
Depth (mm)	42	41	60	42	50
Emission	Infrared	Infrared	Infrared	Infrared	Infrared
Adjustment	manually "+/-" button or teach-in dinamic	potenziometer/ teach-in/and teach in input	potenziometer/ teach-in/and teach in input (store 30 teach values)	manually "+/-" button or teach-in dinamic	manually "+/-" button or teach-in dinamic
Minimum object detected	0,05mm			0,05mm	
Operating voltage	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 35 Vdc
No-load current	< 40 mA (Val=30V)	< 30 mA (Val=30V)	< 30 mA (Val=30V)	< 40 mA (Val=30V)	< 35 mA (Val=30V)
Output current	100 mA	100 mA	100 mA	100 mA	100 mA
Output voltage drop	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)
Output type	NPN / PNP, Lo/Do	Lo/Do (NPN or PNP)	Lo/Do (NPN or PNP)	NPN / PNP, Lo/Do	Lo/Do (NPN or PNP)
Switching frequency	10 KHz	10 kHz	10 kHz	10 KHz	3 kHz
Operative Temperature range	-20 °C /+60 °C	-20 °C /+60 °C	-20 °C /+60 °C	-20 °C /+60 °C	-10 °C /+60 °C
protection degree	IP65	IP65	IP65	IP65	IP67
Housing Material	PA	PA	PA	PA	GDZn
Connection	M8 4pin	M8 4pin/3pin M12 5pin cable	M8 4pin M12 5pin cable	M8 4pin	M8 4pin/3pin

MARKET SECTORS

MAIN APPLICATIONS

- Packaging lines
- Labeling machines
- Paper and Printing machines

SALES ARGUMENTS

FC8U

PRODUCT HIGHLIGHTS

Dinamic teach-in or control panel and *manual adjstment* with "+/- buttons
Ultrasonic emission
Minimum object detection **2 mm** (Gap between *Label*), **2mm** (label Size)
Metal *housing*
Light/Dark switching, selectable by button
Switching frequency **1500Hz**
M8 *connectors* (**4**pins): **PNP** or **NPN**, **Lo/Do**
IP65 *mechanical protection*
+5°C...+55°C operating temperature range

Forks width 3 mm
Forks depth 69 mm

TECHNICAL DATA

PARAMETERS	DATA
Width (mm)	3 mm
Depth (mm)	69mm
Emission	Ultrasonic
Adjustment	Manually "+/-" buttons or Teach-in (dinamic)
Minumum Object size detection	2mm (Gap between labels) 2mm (Size of labels)
Maximum flow rate	180m/min
Operating voltage	10 – 30 Vdc
No-load current	< 45 mA (Val=30V)
Output current	100mA
Output voltage drop	2 V max. (Il=100mA)
Output type	NPN or PNP Lon/Don
Switching frequency	1500Hz
Time delay before availability	300µS
Supply electrical protections	Polarity reversal, transient
Output electrical protections	Short circuit (autoreset)
Operative Temperature range	+5°C /+55 °C
Storage Temperature	-20 °C /+70 °C
protection degree	IEC IP65 (EN60529)
LED indicators	Yellow : light state
Housing Material	Aluminium
Weight	130 gr

STRUCTURE CODE

FC8U/0P-M307-1F

EMISSION
U=Ultrasonic

STATE
0=(Lo/Do selectable)

OUTPUT
P = PNP
N = NPN

WIDTH
M3 = 3mm

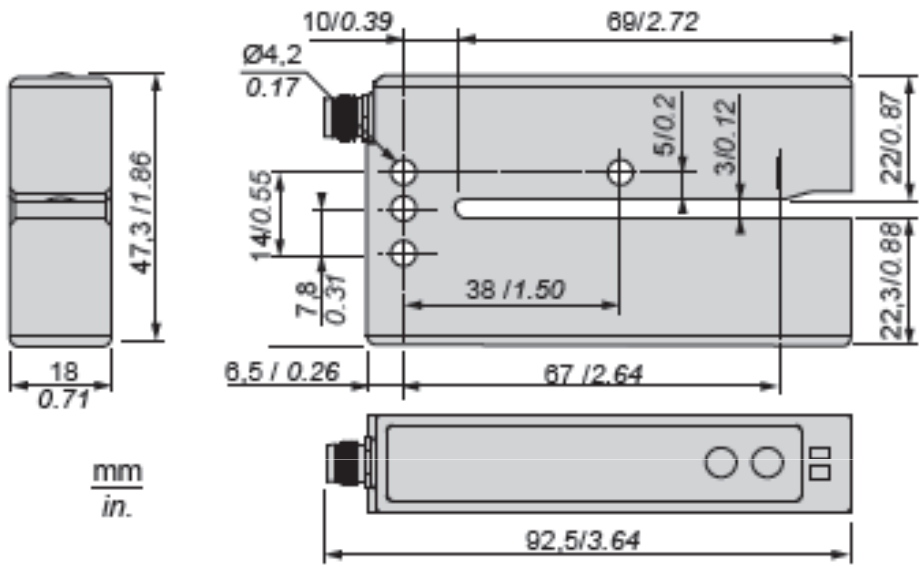
DEPTH
07 = 69mm

HOUSING
1 = Metallic

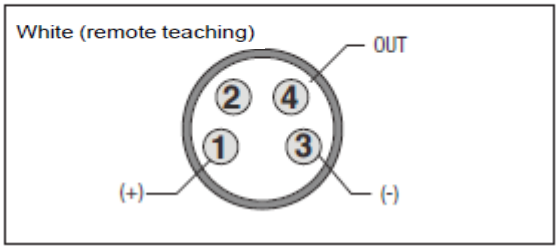
CONNECTION
F = Plug M8 (4pin)

Code Available
FC8U/0P-M307-1F
FC8U/0N-M307-1F

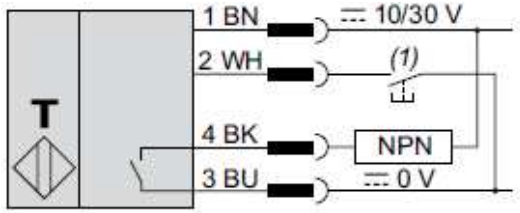
MECHANICAL DIMENSIONS



M8 – 4 pin

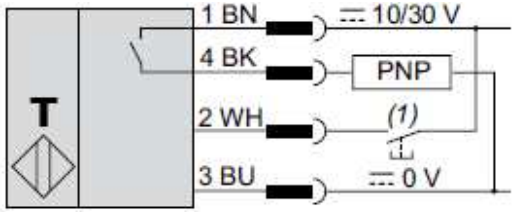


Uscita NPN
*NPN output**



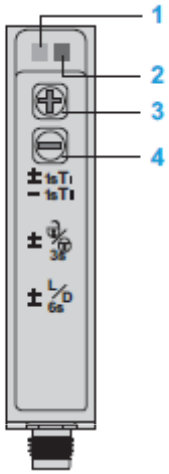
(1) Remote teaching.

Uscita PNP
*PNP output**



(1) Remote teaching.

FC8U



Yellow LED "ON": Output activated

Red LED "ON": Adjustments and keypad locking

, 4 Sensitivity adjustment

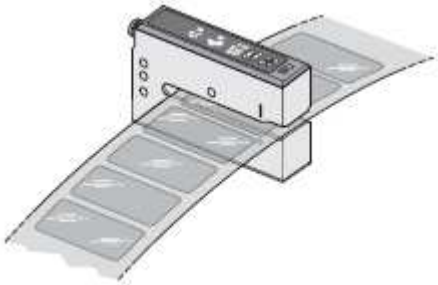
+ 4 Teach mode and automatic adjustment of sensitivity (press time < 3 seconds)

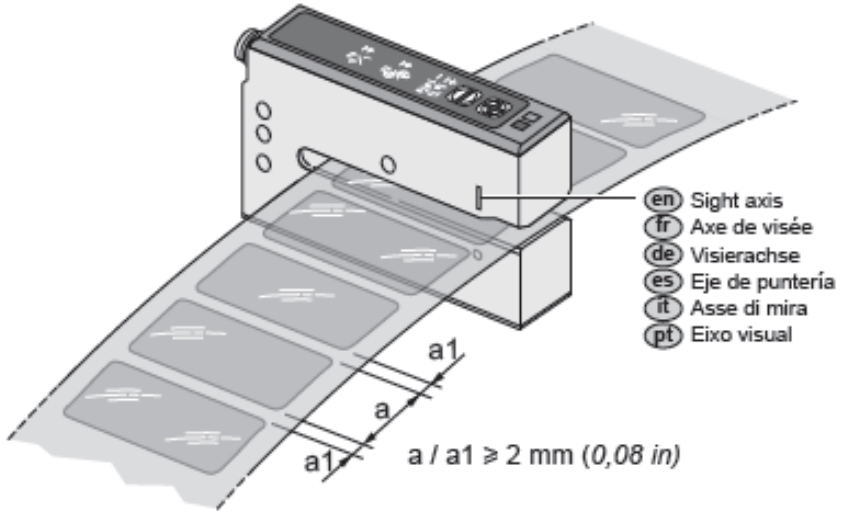
+ 4 Keypad locking (3 s ⩽ press time < 6 s)

+ 4 NO/NC (press time ⩾ 6 s)

Applicazioni - *Applications*

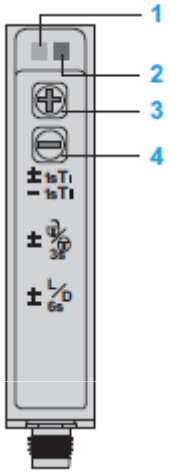
*Detection of **TRANSPARENT** labels on opaque and transparent strip*





FC8U

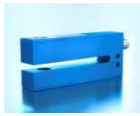
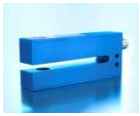
Settaggio - *Setting*



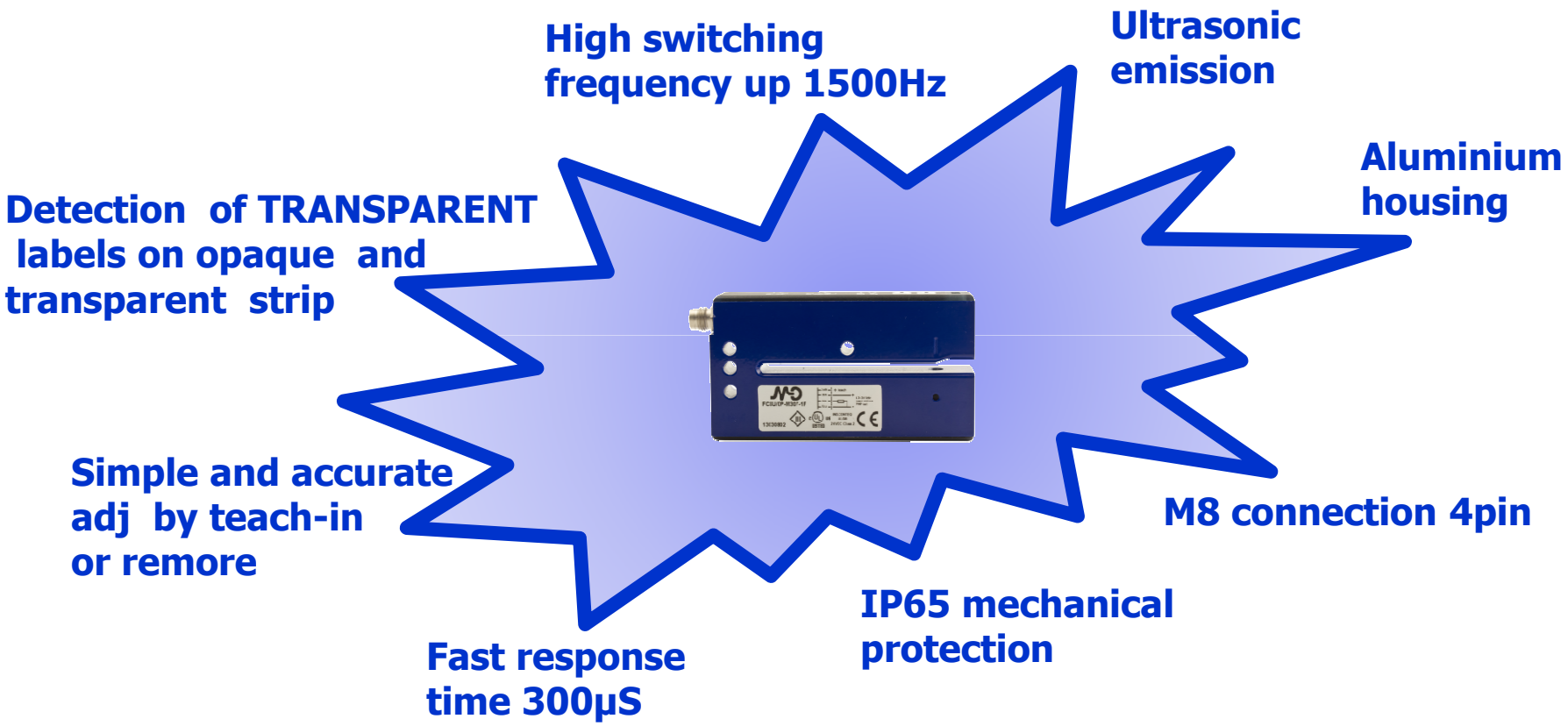
(en) / (fr) / (de) — ⊗ Off / éteinte / Aus — On / Allumée / Ein — Blinking / Clignotante / Blinkend — Blinks slowly / Clignote lentement / Langsam blinkend

	Action / Action / Aktion	Red LED / DEL rouge	Yellow LED / DEL jaune
Dynamic teach / Apprentissage dynamique			
① Or external teach / ou apprentissage externe / **oder externes Teach-In**	& < 3 s	8 Hz / 4 Hz	ON/OFF according to the old threshold / Allumé/éteint suivant le seuil précédent / EIN/AUS je nach altem Schwellenwert
② Or external teach / ou apprentissage externe / oder externes Teach-In		⊗ Dynamic teach done/ Apprentissage dynamique terminé/ Dynamisches Teach-In abgeschlossen; 3 x 1 Hz not enough signal/ signal insuffisant/nicht ausreichendes Signal	ON/OFF according to the old threshold / Allumé/éteint suivant le seuil précédent / EIN/AUS je nach altem Schwellenwert
Static teach / Apprentissage statique / Statisches Teach-In			
③ Place the web (or label) / Placer la bande (ou l'étiquette) / **Streifen (oder Etikett) platzieren**	& < 3 s	8 Hz	ON/OFF according to the old threshold / Allumé/éteint suivant le seuil précédent / EIN/AUS je nach altem Schwellenwert
Place the label (or web) Placer l'étiquette (ou la bande) / **Etikett (oder Streifen) platzieren**		⊗ Static teach done / Apprentissage statique terminé/ Statisches Teach-In abgeschlossen; 3 x 1 Hz not enough signal/ signal insuffisant/nicht ausreichendes Signal	ON/OFF according to the old threshold / Allumé/éteint suivant le seuil précédent / EIN/AUS je nach altem Schwellenwert
Sensitivity adjustemnt / Réglage de sensibilité / Einstellung der Empfindlichkeit			
④ Step by step Pas à pas **Einzelschritts**			**ON/OFF when threshold is passed upward of downward / Allumée/éteinte en cas de dépassement du seuil (vers le haut ou le bas) / EIN/AUS bei Über- oder Unterschreitung des Schwellenwerts**
Fast Rapid Schnell	t > 2 s	It stays ON when the limit threshold is reached / Reste allumé lorsque le seuil limite est atteint / **Bleibt EIN wenn der Grenzschwellwert erreicht ist** → 2 s	
Locking/Unlocking keyboard / Verrouillage/déverrouillage clavier / Tastatursperre/-freigabe			
⑤ Locking / Verrouillage / Sperre	& 3 s < t < 6 s	Release the buttons / Relâcher les boutons / Tasten loslassen; 3 s	–
Keyboard locked/Clavier verrouillé/Tastature gesperrt	–		–
Unlocking / Déverrouillage / Freigabe	& 3 s < t < 6 s	Release the buttons / Relâcher les boutons / Tasten lollassen; 3 s	–
Keyboard unlocked / Clavier déverrouillé / Tastatur freigegeben (entsperrt)	–	⊗	–
Output signal / Signal de sortie / Ausgangsignal			
⑥ Switching NO/NC function / Commutation fonction NO/NC / **Umschaltung NO/NC-Funktion**	& > 6 s		OFF (No Label) / AUS (Kein Etikett); ON (Label) / EIN (Kein Etikett); NO / NC
Output protection / Protection de sortie / Ausgangschutz			
⑦ **Output in short-circuit / Sortie en court-circuit / Ausgang mit Kurzschluss**	–		

BENCHMARK COMPETITORS

	MD Micro Detectors	LEUZE	LEUZE	LEUZE	SICK	SICK	MICROSONIC	MICROSONIC
								
PARAMETERS	**FC8U**	**GSU 14B**	**IGSU 14B**	**GSU 6**	**UF3**	**Ufnext**	**esf1/CDF**	**esf1/CF**
Width (mm)	69	68,5	68,5	48	69	69	67	67
Depth (mm)	3	4	4	2,5	3	3	6	6
Emission	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic	Ultrasonic
Adjustment	manually "+/-" button and teach-in	manual teach-in	easyteach	teach-in	manually "+/-" button	manually "+/-" button and teach-in	via teach-in push-buttom input pin5	via teach-in push-buttom input pin2
Minimum object detected	2mm/2mm	>5mm/2mm	>5mm/2mm					
Operating voltage	10 – 30 Vdc	12 – 30 Vdc	12 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	10 – 30 Vdc	20 – 30 Vdc	10 – 30 Vdc
No-load current	< 40 mA (Val=30V)			< 40 mA (Val=30V)	< 40 mA (Val=30V)	< 40 mA (Val=30V)	50mA	50mA
Output current	100 mA	80 mA	80 mA	100 mA	100 mA	100 mA	200 mA	100 mA
Output voltage drop	< 2 V (Il=100mA)	< 2 V (Il=100mA)	< 2 V (Il=100mA)	< 2 V (Il=100mA)	< 2 V (Il=100mA)	< 2 V (Il=100mA)	2 V max. (Il=100mA)	2 V max. (Il=100mA)
Output type	NPN or PNP, Lo or Do	Loand Do	Lo or Do	NPN or PNP, Lo or Do	NPN or PNP, Lo or Do	NPN/PNP; Lo/Do	Push-Pull/PNP	Lo/Do (NPN or PNP)
Switching frequency	1,5khz	2kHz	2kHz	1khz	1,2khz	1,5khz	1,2khz	1,2 kHz
Operative Temperature range	+5°C/+55°C	+0°C/+60°C	+0°C/+60°C	+5°C/+50°C	+5°C/+30°C	+5°C/+55°C	+5°C/+60°C	+5°C/+60°C
protection degree	IP65			IP62	IP65	IP65	IP65	IP65
Housing Material	Alluminium	Alluminium	Alluminium	Alluminium	Alluminium	Alluminium	Alluminium	Alluminium
Connection	M8 4pin	M12 5pin	M12 5pin	M8 or cable	M8 4pin	M8 4pin	M12 5pin	M8 4pin

SALES ARGUMENTS



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