



# F series

Photoelectric sensors  
for DIN-rail mounting



## features

- Models with trimmer sensitivity
- Models with Teach-In
- Double digital display
- High switching frequency
- Approvals: CE

## web contents

- Application notes
- Photos
- Catalogue / Manuals



Photoelectric sensors  
for DIN-rail mounting

## code description

F 1 R / 0 P - 0 A

series	<b>F</b>	Optical fibres amplifier
type	<b>1</b>	Standard model, trimmer sens. adj.
	<b>2</b>	High speed model, trimmer sens. adj.
	<b>6</b>	Digital models double display
emission	<b>R</b>	Red emission
LO / DO output	<b>0</b>	LO/DO selectable output
PNP / NPN output	<b>P</b>	PNP output
	<b>N</b>	NPN output
housing	<b>0</b>	Plastic housing
cable exit	<b>A</b>	Cable exit 2 m

## available models

output	adjustment	switching frequency	PNP output	NPN output
cable	trimmer	standard	F1R/0P-0A	F1R/0N-0A
		high speed	F2R/0P-0A	F2R/0N-0A
	Teach-In	standard	F6R/0P-0A	F6R/0N-0A



	standard F1R/0*-0A	high speed F2R/0*-0A	digital F6R/0*-0A
nominal sensing distance	depending on fibre used 36 mm		
emission	red (680 nm)		red (650 nm)
differential travel	≤15 %		
repeat accuracy	5 %		
operating voltage	12...24 Vdc		
ripple	≤10 %		
no-load supply current	< 35 mA		< 40 mA
load current	50 mA max		
leakage current	< 10 µA		
output voltage drop	1 V max		
output type	NPN or PNP - LO / DO selectable		
responce time	200 µs max	ON: 20 µs OFF: 30 µs	1ms
power on delay	≤ 200 ms		
power supply protections	polarity reversal		
output electrical protections	short circuit		
sensitivity adjustment	trimmer (8 giri)		Teach-In
operative Temperature range	-25...+55° C (without freeze)		
storage temperature	-30...+70° C (without freeze)		
EMC	in conformity with the EMC Directive according to EN 60947-5-2		
interference by external light	10.000 lux (incandescent lamp) 20.000 lux (sunlight)		
protection degree	IP50 (according to: IEC 60529)		
LEDs	orange (output active) green (n.4 - received signal level) red (no received signal)		orange (output active) 8 bits display (n.4 red: incidentsignal; n.4 green: threshold level)
housing material	PBT (housing); PC (cover)		
weight (approximate)	70 g (approx.)		

## value tabel

The values shown in the following tables are measured, by using our CF/CB1 optical fibre, set to obtain an hysteresis of about 15% with all type of amplifier.

## glass optical fibres CV series (mm)

F1 series		F2 series		F6 series		models
-	-	70	90	-	-	CV-CB1
						CV-CB3
410	500	200	240	800	925	CV-RB4
						CV-RB6

## plastic optical fibres cf series (mm)

F1 series		F2 series		F6 series		models
ON 90 %	OFF 90 %	ON 90 %	OFF 90 %	ON 90 %	OFF 90 %	
0	0	0	0	0	0	CF-CA1
40	47	15	18	100	115	CF-CA2
						CF-CA4
100	130	60	68	300	350	CF-RA4
						CF-RA7
150	180	70	90	300	345	CF-CB1
						CF-CB3
410	500	200	240	800	925	CF-RB3
						CF-RB4
						CF-RB6
4,000	4,000	2,400	2,800	> 4.000 EX.G. = 12		CF-RB9
						CF-RBA
50	58	20	25	90	115	CF-CC1
350	400	190	220	600	690	CF-RC6
						CF-RC9
2,200	2,600	1,600	1,900	> 4,000 EG = 12		CF-RCA

## accessories for CF series optical fibres (mm)

series F1	series F2	series F6	model fibres	models
Sn	Sn	Sn	CF-RB3-20	
400	200	800	CF-RB3-20	AF/ER9
1,500	1,000	3,000	CF-RBA-** CF-RCA-20	ST28

## modular fibres for any application AF series (mm)

series F1	series F2	series F6	models
Sn	Sn	Sn	
1,500	700	3,000	AF/ER4
2,200	1,000	4,500	AF/ER5
			AF/ER6
4,500	2,000	6,000	AF/ER7

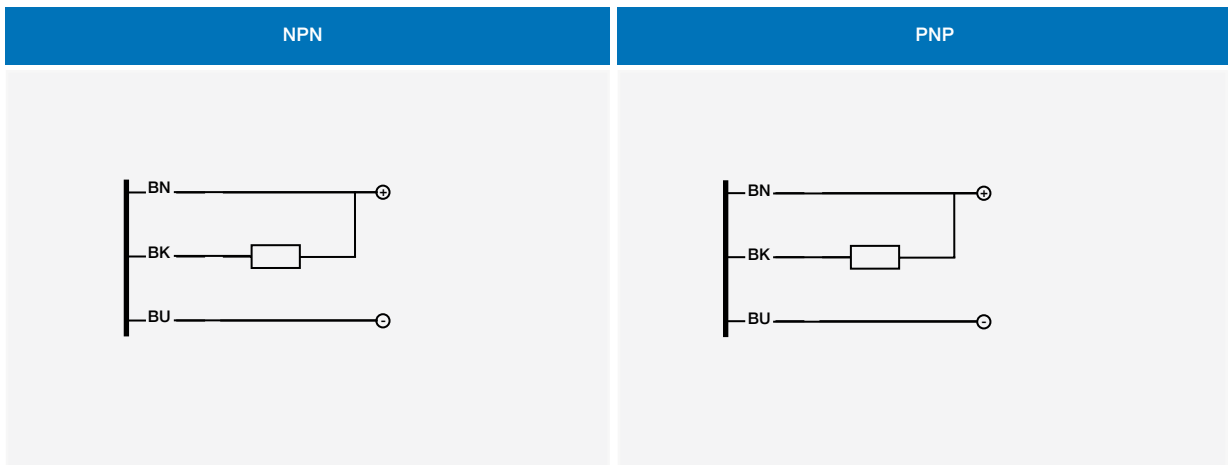
## accessories for CV series optical fibres (mm)

series F1	series F2	series F6	models
Sn	Sn	Sn	
	20		AF/FC1
	30		AF/FC2
3,000	2,000	6,000	AF/ER1
4,000	3,000	8,000	AF/ER2
10,000	8,000	14,000	AF/ER3



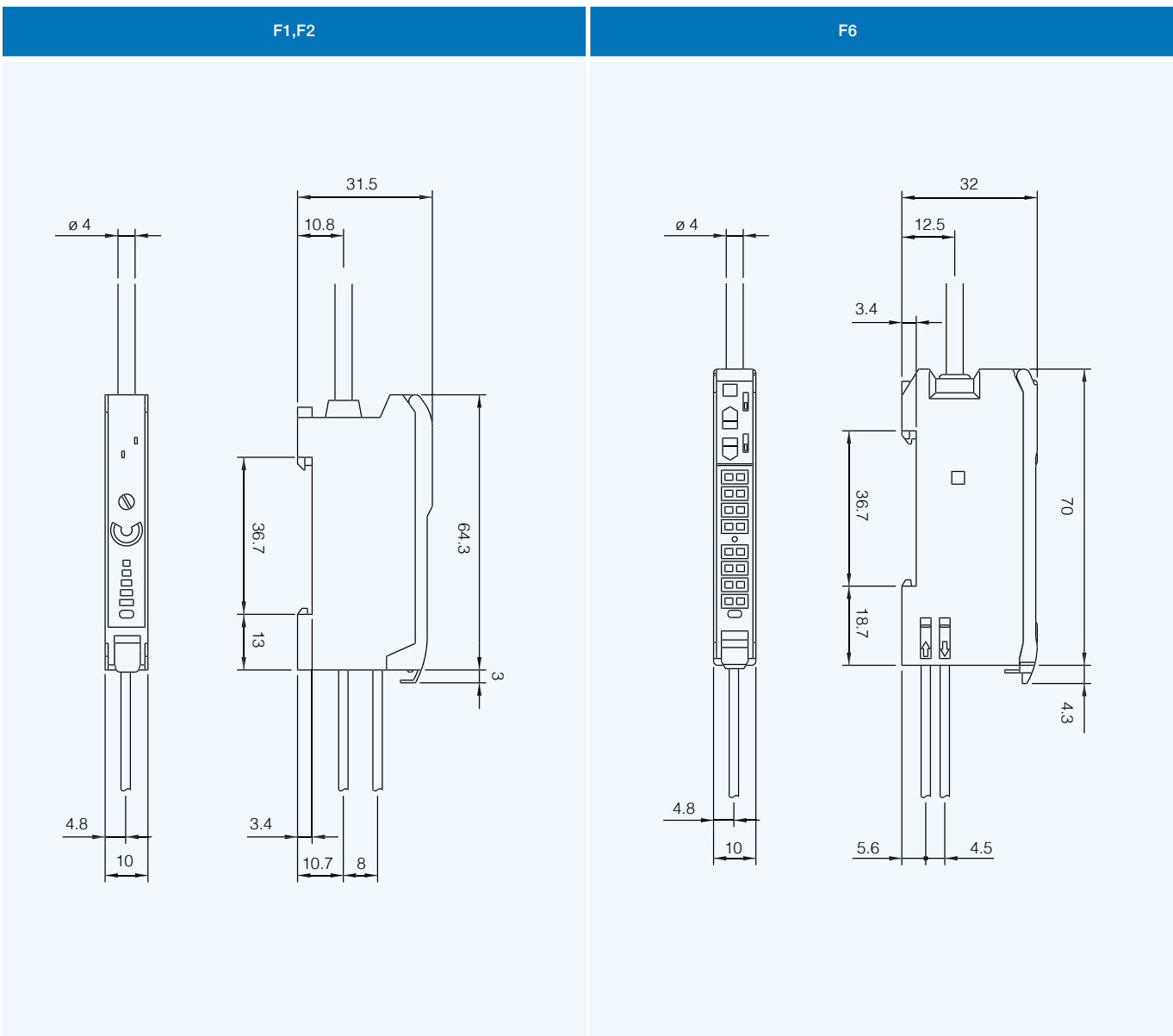
# electrical diagrams of the connections

Photoelectric sensors  
for DIN-rail mounting



- BN** brown
- BU** blue
- BK** black
- WH** white
- PK** pink
- GY** gray

# dimensions (mm)



F