

multimode • fiber • switches

optojena®

FSM 1x3 to 1x9

Fiber core diameter 50 μm – 200 μm

- Fast switching time
- Low insertion loss
- High optical isolation
- Compact design
- Wavelength range 180 nm – 2600 nm

Applications:

- Optical measurement and testing systems
- Spectroscopy
- Optical engineering
- Telecommunications
- Environmental trace analysis



fig.: FSM 1x4

The fiber switches are ideally suited to combine different sensor points with just one spectrometer. Therefore, the end-user derives a cost benefit and is able to directly compare different optical channels using only one spectrometer/detector system.

Technical data:

fiber switch part.no.:	unit	FSM 1x3		FSM 1x4		FSM 1x6		FSM 1x9	
		F-103-05	F-103-03	F-104-05	F-104-03	F-106-05	F-106-03	F-109-05	F-109-03
number of input fibers		1	1	1	1	1	1	1	1
number of output fibers		3	3	4	4	6	6	9	9
fiber core	μm	$\varnothing 50$; 62.5;100	$\varnothing 200$	$\varnothing 50$; 62.5;100	$\varnothing 200$	$\varnothing 50$; 62.5;100	$\varnothing 200$	$\varnothing 50$; 62.5;100	$\varnothing 200$
insertion loss (typ.) ¹⁾	dB	1.0	1.0	1.4	1.4	1.4	1.4	1.4	1.4
cross talk typ.	dB	-65	-60	-60	-60	-60	-60	-60	-60
repeatability typ.	dB	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
switching time typ	ms	2	2	2	2	2	2	2	2
lifetime typ.	cycle s	10^9	10^9	10^9	10^9	10^9	10^9	10^9	10^9
operating temperature	$^{\circ}\text{C}$	0...+60							
humidity	%RH	55							
operating voltage	V	5VDC							
control signal ²⁾	-	binary code (BCD)							
current	mA	100							
fiber length	m	1							
housing l/w/h	mm	175x105 x44	225x105 x44	175x105 x44	225x105 x44	175x105 x44	225x105 x44	175x105 x44	225x105 x44
housing l/w/h ³⁾	mm	175x130 x45	225x130 x45	175x130 x45	225x130 x45	175x130 x45	225x130 x45	175x130 x45	225x130 x45

1) Specifications do not include connector loss

2) RS232 version upon request part no.: Z-950-95

3) Screw slot version

All casings available in a screw slot version upon request. When ordering please use the suffix 95, 93 instead of -05, -03 respectively.

All fiber switches are available with anti-reflection option. Please ask for more details and the special order numbers.



fig.: F-109-93

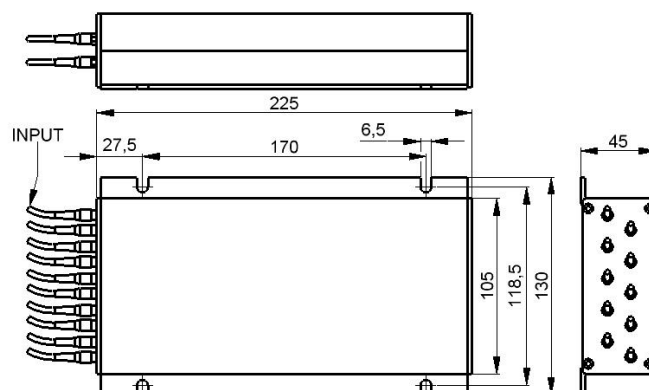


fig.: F-109-03

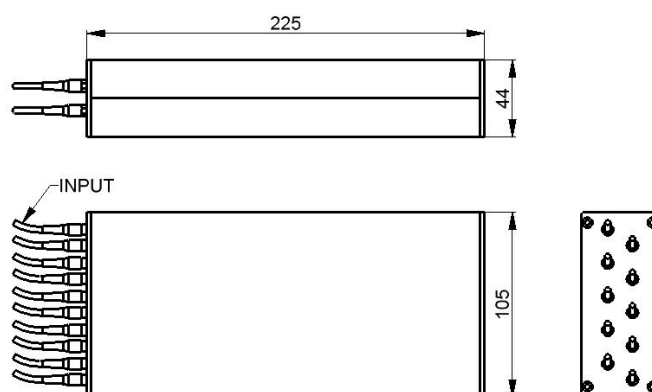
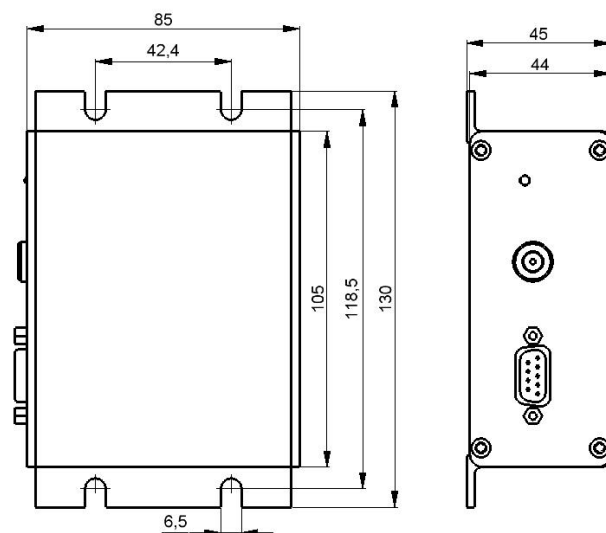
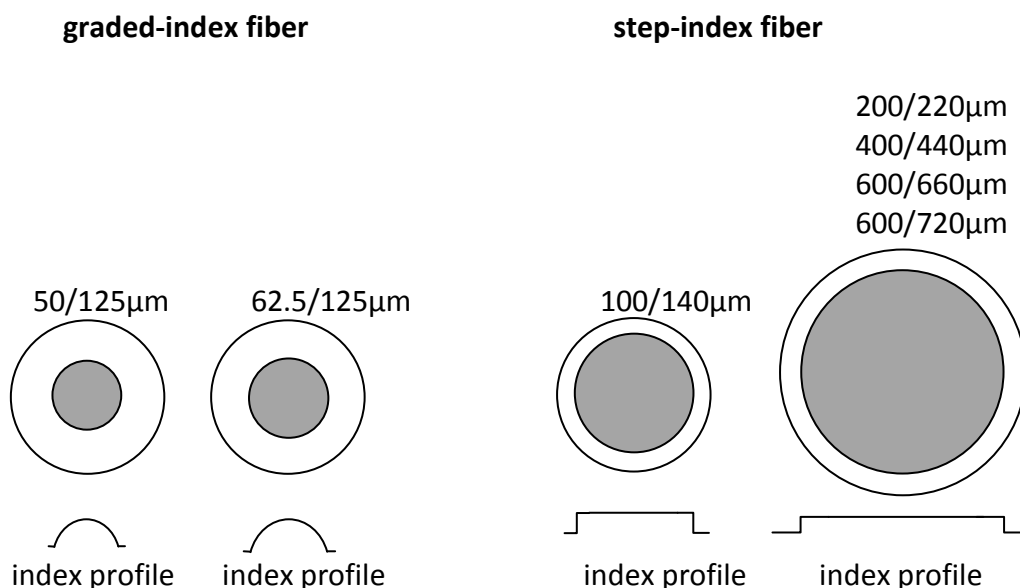


fig.: Z-950-95 RS232 BOX



Types of optical fibers:

Optical fibers are mainly classified with respect to the lateral dimensions of the light-guiding region, the so-called fiber core. The core diameter together with the refractive index distribution of the core-cladding assembly determines the number of modes the fiber carries. The following figure and table give a rough overview on the different fiber types.



fiber diameter µm	index-profile	wavelength range nm	spectrum	NA*	connector typ	part no.for fiber (without optical connector)
50/125	graded-index	850-1300	-	0,20	SMA, ST, FC/PC, FC/APC, E2000	C-319-**
62.5/125	graded-index	850-1300	-	0,28	SMA, ST, FC/PC, FC/APC, E2000	C-329-**
100/140	graded-index	850-1300	-	0,29	SMA, ST, FC/PC, FC/APC	C-339-**
100/110	step-index	180-1100	UV, VIS	0,22	SMA, ST, FC/PC	C-230-**
100/140	step-index	600-2600	IR	0,22	SMA, ST, FC/PC, FC/APC	C-130-**
105/125	step-index	600-2600	IR	0,22	SMA, ST, FC/PC	C-120-**
200/220	step-index	180-1100	UV, VIS	0,22	SMA, ST, FC/PC	C-240-**
200/220	step-index	600-2600	IR	0,22	SMA, ST, FC/PC	C-140-**
400/440	step-index	180-1100	UV, VIS	0,22	SMA	C-260-**
400/440	step-index	600-2600	IR	0,22	SMA	C-160-**
600/660	step-index	180-1100	UV, VIS	0,22	SMA	C-280-**
600/720	step-index	600-2600	IR	0,22	SMA	C-185-**

*NA – numerical aperture

**when ordering please use the suffix: ST: -10; SMA: -20, FC/PC: -30, FC/APC: -50, E2000: -60

All fibers can be provided with anti –reflection option after request. The anti-reflection option is recommended for spectroscopy application.