

multimode • fiber • switches

optojena®

FSM 1x3 to 1x9

Fiber core diameter 400 μm – 600 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
- Environmental trace analysis

fig.: FSM 1x9

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-143-10	F-163-10	F-144-10	F-164-10	F-146-10	F-166-10	F-149-10	F-169-10
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	Ø400	Ø600	Ø400	Ø600	Ø400	Ø600	Ø400	Ø600
insertion loss (typ.) ¹⁾	dB	1.5	1.5	2.0	2.0	1.5	1.5	2.0	2.0
cross talk typ.	dB	-60	-60	-60	-60	-63	-63	-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	7	7	7	7	7	7	7	7
lifetime typ.	cycles	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹
operating temperature	°C	0...+60							
humidity	%RH	55							
operating voltage	V	100...240 VAC							
control signal ²⁾	-	BCD code, RS232, USB							
bulkhead connector	type	SMA							
fiber length	m	1							
housing l/w/h	mm	448 x 375.5 x 88.9 (17.6378 x 14.7835 x 3.5 inches)							

1) Specifications do not include connector loss

2) Option: ETHERNET interface (part no. Z-950-100) substitute the USB interface

Accessories

description	connector style	length	part no.
adapter fiber 400/440μm; IR; NA; 0.22	plug to plug	1m	C-160-20/20
adapter fiber 400/440μm; UV; NA; 0.22	plug to plug	1m	C-260-20/20
adapter fiber 600/720μm; IR; NA; 0.22	plug to plug	1m	C-185-20/20
adapter fiber 600/660μm; UV; NA; 0.22	plug to plug	1m	C-280-20/20



fig.: F-164-10



fig.: F-169-10



fig.: F-16X-10 (rear view)

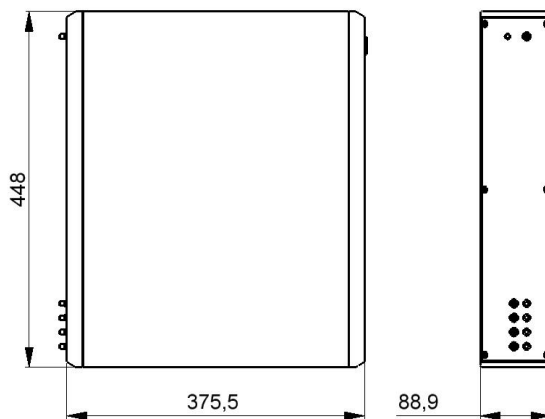
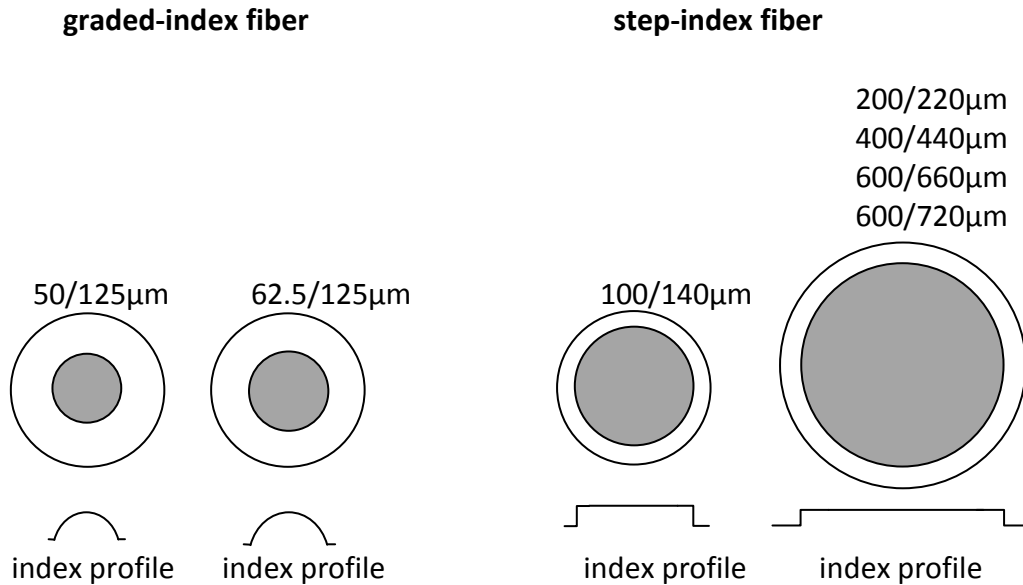


fig.: casing size

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.