

multimode • fiber • switches

optojena®

FSM 1x2

- 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 1x2

The fiber switches are ideally suited to combine up to two 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 1x2						
		F-102-04	F-112-04/8° ⁴⁾	F-102-05	F-142-05	F-142-03	F-162-05 ⁵⁾	F-162-13
number of input fibers		1	1	1	1	1	1	1
number of output fibers		2	2	2	2	2	2	2
fiber core	µm	Ø50; 62.5;100	Ø50; 62.5	Ø200	Ø400	Ø400	Ø600	Ø600
insertion loss (typ.) ¹⁾	dB	1.0	1.0	1.0	0.8	0.8	0.8	0.8
cross talk (typ.)	dB	-65	-65	-60	-55	-55	-50	-50
repeatability (typ.)	dB	0.02	0.02	0.02	0.02	0.02	0.02	0.02
switching time (typ.)	ms	2	2	2	5	5	7	7
lifetime (typ.)	cycles	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹
operating temperature	°C	0...+60	0...+60	0...+60	0...+60	0...+60	0...+60	0...+60
Humidity	%RH	55	55	55	55	55	55	55
operating voltage	V	7-12VDC or 7-9VAC						
control signal ²⁾	-	5V TTL						
current	mA	100						
fiber length	m	1	1	1	1	-	1	-
bulkhead connector		-	-	-	-	SMA	-	SMA
housing l/w/h	mm	85x105x44		175x105x44		225x105x44	175x105x44	225x165x44
housing l/w/h ³⁾	mm	85x135x45		175x135x45		225x135x45	175x135x45	225x195x45

1) Specifications do not include connector loss

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

3) Screw slot version

4) Anti-reflection option

5) Input and output fibers mounted on opposite sides

All casings available in a screw slot version upon request. When ordering please use the suffix 94, 94/8°, 95, 93 or 913 instead of -04, -04/8°, -05, -03, -13 respectively.

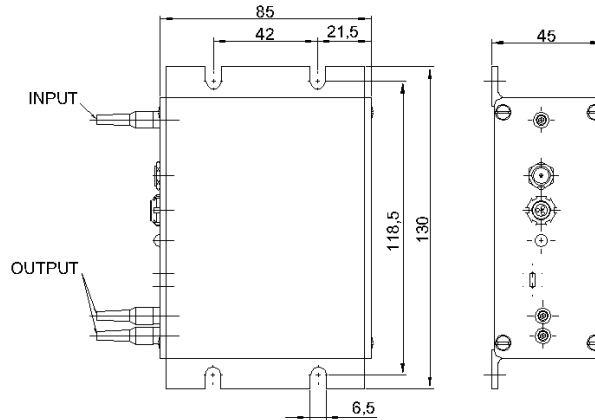


fig.: F-102-94

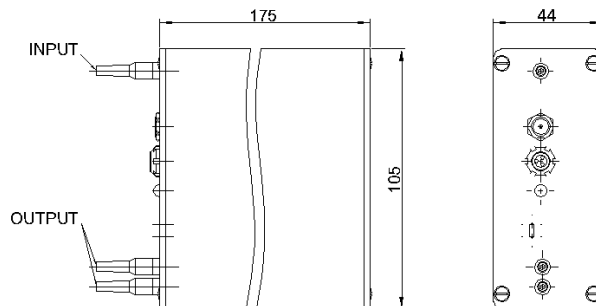


fig.: F-102-05

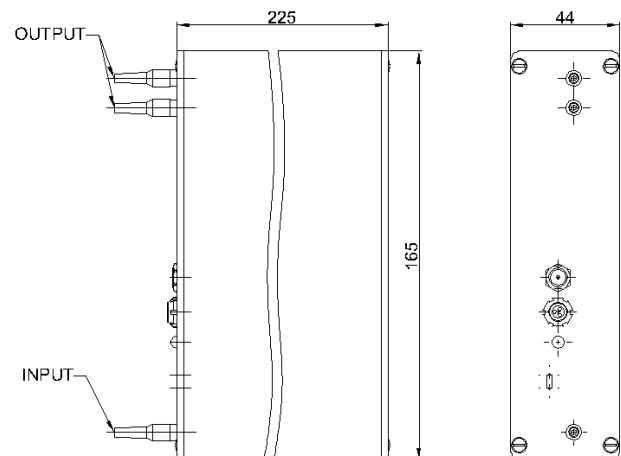
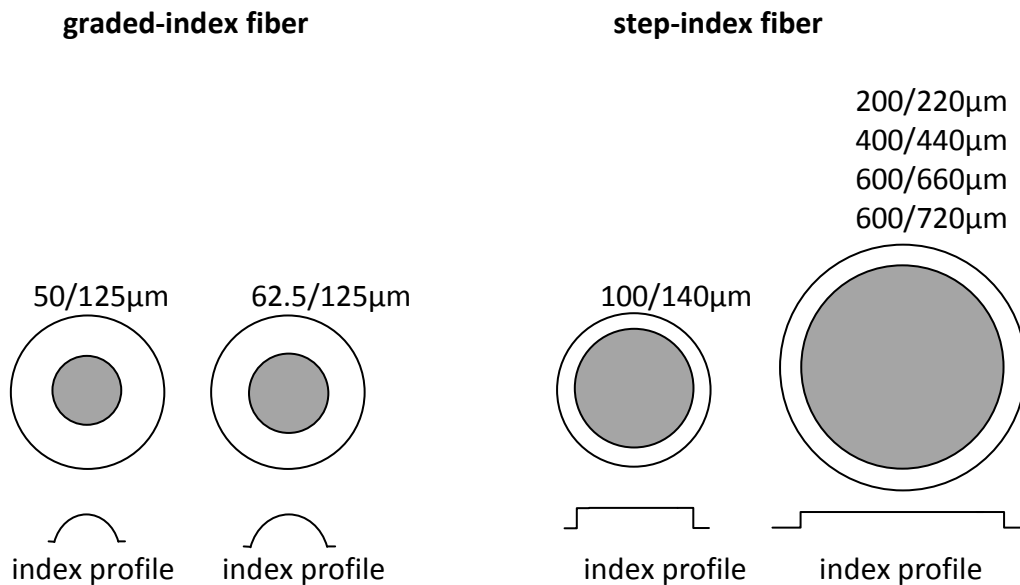


fig.: F-162-13

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.