Ratioplast
Electronics | OptoElectronics

Data sheet **FO connector**
F-SMA connector for POF

F-SMA Connector for Plastic Optical Fiber (POF) 1/2.2 mm, simplex

1 General

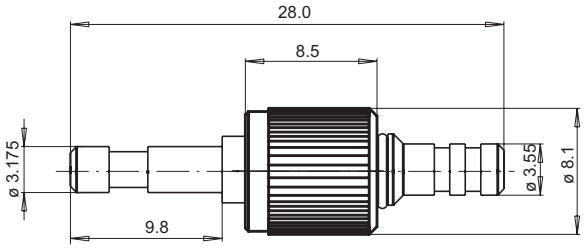
The FO connector style F-SMA is optimized in particular for applications using standard 1 mm polymer optical fiber acc. IEC 60793-2-40, demanding a fast and easy cable assambly with high reliability, very good optical and mechanical characteristics. The F-SMA connector complies with IEC 61754-22

2 Application

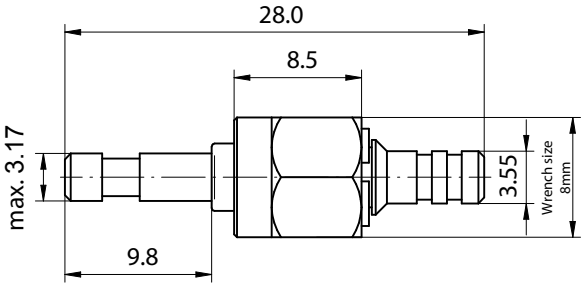
Due to the good optical features and the easy cable assembly, the F-SMA connector is useable in several applicationsoptical networking

- industrial electronics
- power electronics
- consumer electronics

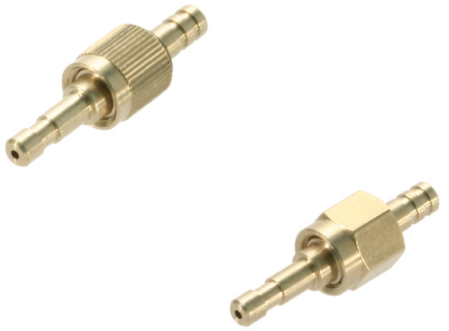
3 Technical drawing



Pic. 2 *F-SMA Connector with knurled nut*



Pic. 3 *F-SMA Connector with hexagonal nut*



Pic. 1 *F-SMA Connector with knurled nut / hexagonal nut*

4 Ordering information

F-SMA connector with dust cap and bend protection boot for 1 mm POF with 2.2 mm jacket

Specification	Part number
F-SMA knurled nut:	
without boot	902SS001SM001
with boot (black)	902SS001SM021
with boot (red)	902SS001SM020
F-SMA hexagonal nut:	
without boot	902SS001SM002
with boot (black)	902SS001SM022
with boot (red)	902SS001SM023

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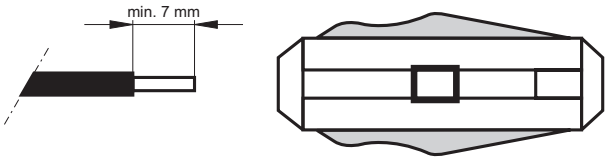
5. Cable assembly

Required tools for FO cable assembling of F-SMA connector with 1/2.2mm POF cable.

Specification	Part number
Crimping tool	910CZ00100004
Crimping tool hexagonal	910CZ00100002
Fiber stripper	910AB00100001
Polishing disc	910PSSMA00001
Polishing film, grain size 1000	910PB00100001

5.1 FO Cable:

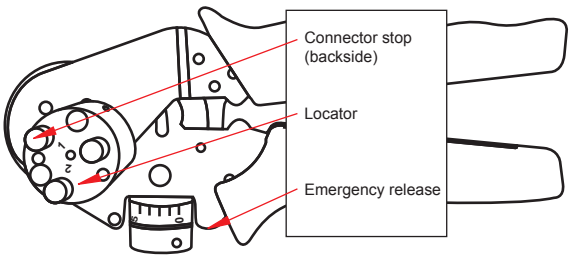
- Remove app. 7 mm of outer jacket 2.2 mm by using the fiber stripper (Pic. 4)



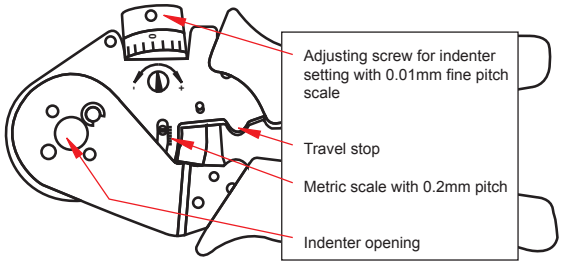
Pic. 4 Fiber stripper

5.2 Fiber crimping:

- Determining measure from table 3 plug connectors overview in type sheet of T10CZ00100004
- Insert the fiber carefully into the F-SMA connector up to the stop. Fiber should protrude min. 1mm out of the connector tip (Pic. 5)
- Put the F-SMA connector together with the
- cable into the indenter opening of the crimping tool (Pic. 6) until travel stop
- Simultaneously push connector and cable
- against travel stop and close handles until the tool releases
- Remove the crimped connector from tool
- Alternative to fiber crimping, pasting of the fiber is also possible.



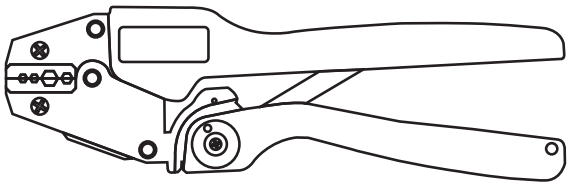
Pic. 5: Locator side of crimping tool (backside)



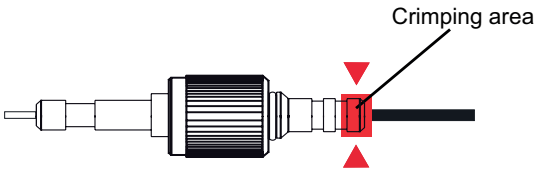
Pic . 6 Indenter opening and scale at the crimping tool (front side)

5.3 Crimping of 2.2mm jacket:

- Align the connector anchor (rear end of connector) with the hexagonal cavity, wrench size 3.0 mm (Pic. 7 and 8), of the crimping tool (910CZ00100002) and squeeze the crimping tool handles until they release.
- Alternative to jacket crimping, pasting of jacket is also possible simultaneously with fiber pasting.



Pic . 7 Crimping tool



Pic . 8 Crimping area for jacket crimping

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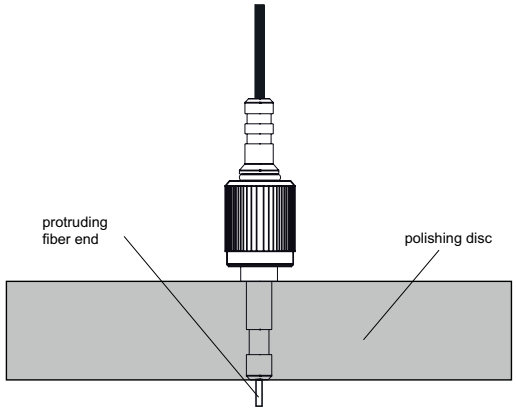
5.4 End face processing:

- After crimping insert connector into polishing disc (Pic. 9) and grind the protruding fiber by using the polish film, grain size 1000 placed on a smooth pad (e.g. glass plate). Press the polishing disc down on the polish film an grind the fiber until the connector is flush with the bottom of the disc
- Wipe the connector with a clean tissue. Best insertion loss results are achieved by wet grinding.
- If the connector is not to be used immediately, cover the end with the dust cap.



Pic . 9 Polishing disc with connetor guidance

6 Technical data

Parameter	Condition	Value	Unit
Material	Ferrule, Nut Snap ring Anti-kink sleeve Dust cap	German silver Steel TPE HD-PE	
Insertion loss	Depending on fiber end face treatment	≤ 1.5	dB
Retention force cable to connector (ambient temperature)	Fiber crimping / Jacket crimping Fiber and Jacket crimping	50 80	N
Fastening torque		hand-tight	
Temperature range	Storage and operation	-40 to +85	°C
Mating cycles		≥ 500	Cycles
Protection class	IP20		

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