



SUHNER® FIBEROPTIC CONNECTOR FAMILY E-2000™



E-2000™ “Safety” from SUHNER® FIBEROPTIC

The E-2000™ is a premium connector which meets international connector standards **CECC 86 275-801/802** and **IEC 61 754-15**.

Recent improvements to the E-2000™ system have again improved its handling and safety making it the highest-performing connector available on the market today.

Safety

- In addition to high performance, the E-2000™ offers safety and time-savings. With its new full-metal protection flap and integrated metal diaphragm in the adapter, the E-2000™ conforms to the highest safety requirements in all current laser classes.
- In addition, all optical functional parts are protected from mechanical damage and dust.
- The mechanical and color coding system can be changed at the connector and at the adapter. This system prevents interconnection errors and helps to save time during installation and maintenance.
- Easily establish permanent connections by simply removing the lock-up lever. The positive locking design prevents any accidental disconnection of the connector and allows easy handling even with high packing densities and poor access or visibility.



The Connector for the New Millennium

Integrated Laser Protection



The integrated full-metal diaphragm in the adapter protects from emerging laser light. The full-metal safety cap in the connector opens and closes automatically. The safety cap has an integrated spring safety device which prevents the ferrule end faces from becoming dirty or damaged.

Because both the adapter and connector have shutters, the E-2000™ offers optimal protection, especially in high-power laser systems.

Performance

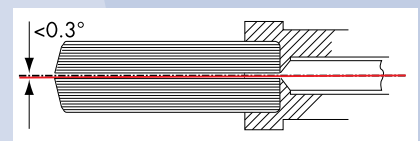
The E-2000™ is used world-wide by network providers of CATV and telecommunication services. For performance and quality, the E-2000™'s performance and quality are in a class of its own. With an IL of 0.1 dB, APC RL >85 dB, the E-2000™ is especially suited for installation in global high-performance networks. The full ceramic ferrule guarantees constant and accurate values during the termination process and offers a constant, high quality and a reliable data transmission.

Zirconia Ferrule



The rugged metallic one-piece-design inner component and the zirconia full ceramic ferrule guarantee the fastest and highest performance consistency during termination.

Tilt angle



The tilt angle, together with the fiber offset, determine the insertion loss. Thanks to the high-precision ferrule inner diameter, a negligible small tilt angle (<math><0.3^\circ</math>) is attained. This value has almost no influence on the insertion loss.

E-2000™ Connector

Specifications

	Singlemode		Singlemode APC 8°		Multimode
	Typ.	Max.	Typ.	Max.	Typ.
Insertion loss IL [dB]	0.12	< 0.4 ¹	0.12	< 0.4 ¹	0.4 ²
Conditioned by type of connector (see below)	0.09	< 0.3 ¹	0.09	< 0.3 ¹	
Return loss [dB]	PC	> 49	> 45	> 85	
	UPC	> 52	> 50		

¹ each-to-each IEC 61300-3-34 method 2 ² IEC 874-1 method 6

Strain relief	100N
Operating temperature	-40 °C to +85 °C, conditioned by type of cable
Durability	min. 1000 cycles
Assembly procedure	glue and polish
Connection	physical contact
Lock mechanism	snap-on
Standards	EN 186-270 / CECC 86 275-801/802 / IEC 61 754-15
Ferrule material	full ceramic zirconia
Connector material	UL 94-V0
Adapter material	UL 94-V0, slotted ceramic sleeve

Ordering Table Connectors

			IL max.*
FLSH-2000-A005	Singlemode	FLSH connector blue, High-End	0.4dB ¹⁾
FLSH-2000-H001	Singlemode	FLSH connector blue, Premium	0.3dB ¹⁾
FLSH-2000-A608	Singlemode APC 8°	FLSH connector green, High-End	0.4dB ¹⁾
FLSH-2000-H600	Singlemode APC 8°	FLSH connector green, Premium	0.3dB ¹⁾
FLSH-2000-B003	Multimode	FLSH connector beige	
ZUP-DUP-BK1	Duplex clamp	(25 pieces), metal	

*conditioned by type of termination process

Ordering Table Adapters

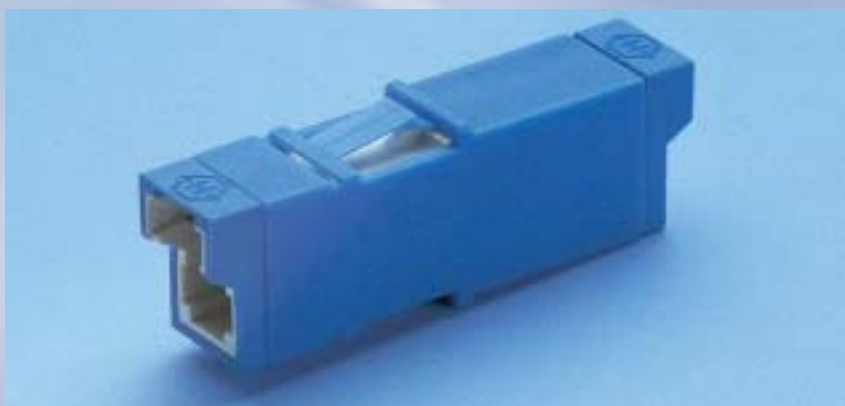
Adapter type:	Mounting:	Sleeve of:	Colour:	Type:
MM	with 2-hole flange	zirconia ceramic	beige	FLSH-FLSH-D102
SM	with 2-hole flange	zirconia ceramic	blue	FLSH-FLSH-D100
SM (APC 8°)	with 2-hole flange	zirconia ceramic	green	FLSH-FLSH-D600
Compact MM	integrated fixing springs	zirconia ceramic	beige	FLSH-FLSH-A101
Compact SM	integrated fixing springs	zirconia ceramic	blue	FLSH-FLSH-A100
Compact APC	integrated fixing springs	zirconia ceramic	green	FLSH-FLSH-A600
Quick-mounting spring	(25 pieces), metal			9801.93.A

¹⁾ Each-to-each IEC 61300-3-34 method 2

Connector E-2000™

A Complete Program for Every Application

E-2000™ Compact Adapter



The E-2000™ compact adapter is space saving and comes equipped with a **quick-lock mechanism**. This compact version of the standard E-2000™ connector does not require screws or other fastening devices. The fixing spring shackles are integrated in the adapter housing and are suited for front plates with a wall thickness of up to 1.6 mm and SC standard cut-outs.

Ordering table compact adapter

Description	Color	Order no.
Multimode	beige	FLSH-FLSH-A101
Singlemode	blue	FLSH-FLSH-A100
APC	green	FLSH-FLSH-A600
Quick-mounting spring	(25 pieces), metal	9801.93.A

E-2000™ Hybrid Adapters



E-2000™ Hybrid Adapters allow connections between the E-2000™ connector and FCPC, FLSA or FSC connectors. All Hybrid Adapters are equipped with a slotted zirconia ceramic sleeve. The adapter operates at temperatures between -40°C to +85°C.

Ordering table hybrid adapters

Order no.	Description	Singlemode PC	Color	groove width
FLSH-FCPC-D101	Hybrid adapter FLSH-FCPC	Singlemode PC	blue	groove width 2.15 mm
FLSH-FCPC-D601	Hybrid adapter FLSH-FCPC	Singlemode APC	green	groove width 2.15 mm
FSLH-FCPC-D602	Hybrid adapter FLSH-FCPC	Singlemode APC	green	groove width 2 mm
FLSH-FLSA-D101	Hybrid adapter FLSH-FLSA	Singlemode PC	blue	
FLSH-FLSA-D601	Hybrid adapter FLSH-FLSA	Singlemode APC	green	
FLSH-FSC-D101	Hybrid adapter FLSH-FSC	Singlemode PC	blue	
FLSH-FSC-D601	Hybrid adapter FLSH-FS	Singlemode APC	green	

E-2000™ Strain Relief Boot

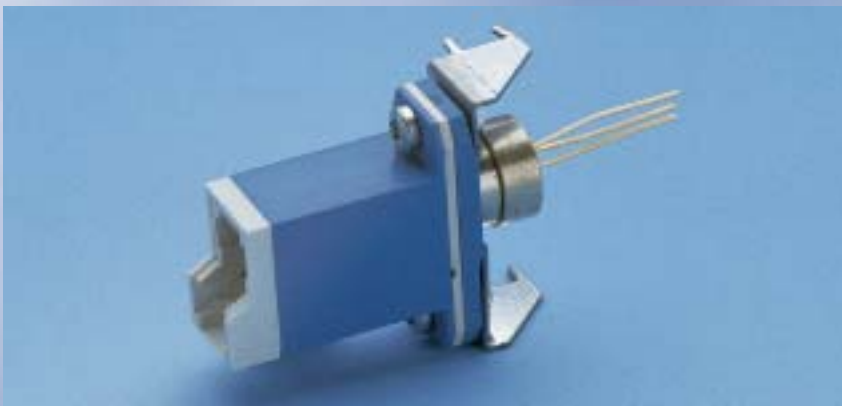


The E-2000™ Strain Relief Boot is designed for installation of the E-2000™ connector into racks with tight space conditions. The 90° boot guarantees the minimal bending radius is not breached.

Ordering table 90° strain relief boot

Description	Color	Order no.
Strain relief boot	green	9890-95-P

E-2000™ Receptacles



The E-2000™ Receptacle combines active opto-electronic parts with the E-2000™ connector family. The E-2000™ Receptacle serves as the base of lasers, VCSEL's and photo-diodes. The assembled laser unit (TO-46) is electrically isolated from the E-2000™ Receptacle (max. voltage 20 V), so the diode is protected from ESD influences.

Technical data

Operating temperature:	- 40 to 85°C
Storing temperature:	- 40 to 85°C
Return loss:	> 55 dB
Reproducibility:	< 0.2 dB
Service life:	min. 1000 cycles

Order note:

The E-2000™ Receptacle is manufactured individually according to the customer's specifications.

E-2000™ Singlemode Assembly Classes

SUHNER FIBEROPTIC manufactures cables, connectors and cable assemblies to the highest quality standards. Different assembly classes are offered to meet individual needs.

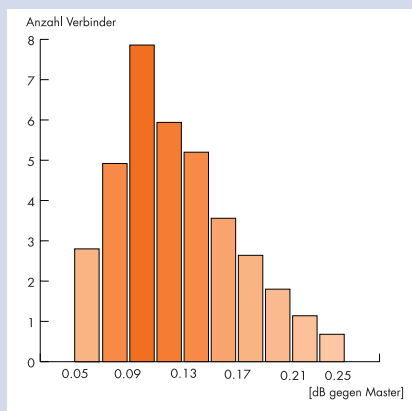
SUHNER FIBEROPTIC cable assemblies offer:

- the highest reproducible quality due to large-scale manufacturing processes
- integrated production – SUHNER FIBEROPTIC is one of the few fiber optic companies who manufactures its complete connector and cable portfolio in-house
- guaranteed high compatibility thanks to in-house production
- full ceramic ferrules on all connectors which guarantees optimal performance and high durability.

The SUHNER FIBEROPTIC performance steps allow the customer to order **E-2000™ single-mode assemblies according to his specific quality requirements.**

Premium Class

Premium assemblies excel by outstanding values. Premium manufacturing processes guarantee an outstanding quality.



	each-to-each	to master
Insertion loss	max. 0.3 dB	0.25 dB
	typ. 0.09 dB	
Return loss	PC > 45 dB	
	APC > 85 dB	

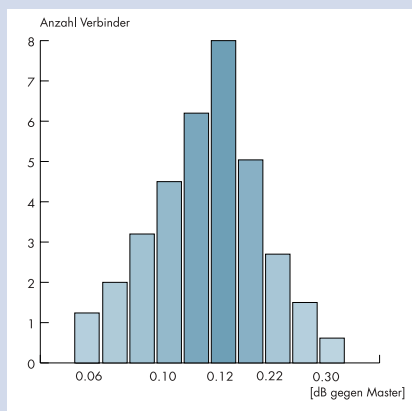
Ferrule end face geometry ¹⁾

Fibre height	PC	max. -125 nm to +50 nm (conditioned by radius)
	APC	±100 nm
Apex offset		< 50 µm
Radius	PC	7 to 25 mm
	APC	5 to 12 mm
Tuning	all connectors are adjusted	

¹⁾ acc. to GR-326-Core, issue 3

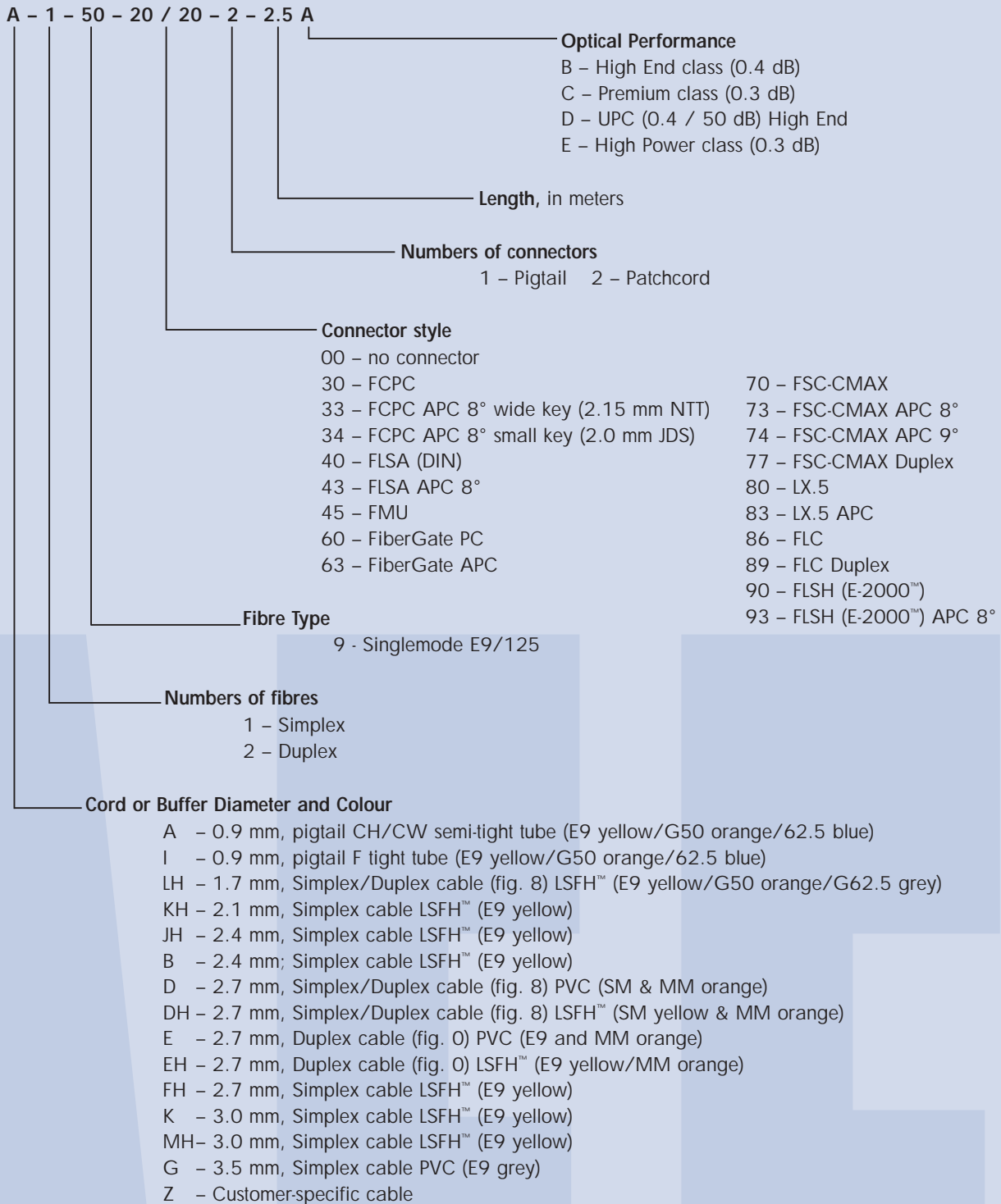
High-End Class

High-End assemblies correspond to world-wide current standards. Choose High-End manufacturing processes for an optimized price/performance ratio.



	each-to-each	to master
Insertion loss	max. 0.4 dB	0.35 dB
	Typ. 0.12 dB	
Return loss	PC > 45 dB	
	UPC > 50 dB	
	APC > 85 dB	
Tuning	all connectors are adjusted	

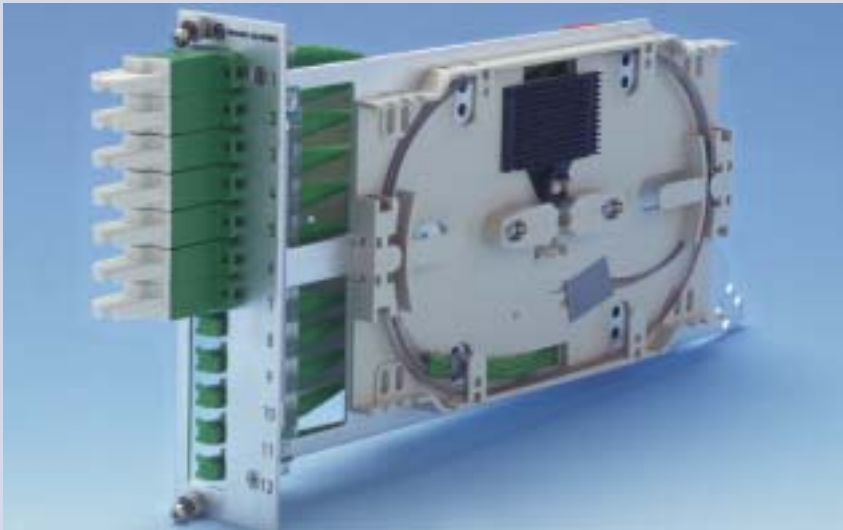
Ordering Code Cable Assemblies



Length tolerances

Nominal size up to	0.5 m	1 m	5 m	25 m	>25 m
Tolerance	+4 cm	+6 cm	+30 cm	+50 cm	+2%

E-2000™ Compact Module



The unique internal connector mounting device allows for quick replacement of adapters without the use of tools. Adapters are simply added or replaced from the front of the panel, by hand, while the connectors in the back of the panel are secured in place. If required, adapters may be added after the initial installation on an as-needed basis. A fixing bracket with radius-limited leading protects the multi-fiber loose tube cable from outside influences. The pre-assembled pigtailed are mechanical and color coded, to prevent incorrect connections. The overlength and splice cassettes are integrated in the cover, to prevent fibers from being damaged.

The E-2000™/3U can be equipped with up to 12 pigtailed type E-2000™, FSC, FST and FCPC connectors and is the ideal compact module for space-saving rack installations. Designed as a rugged compact module, the new E-2000™/3U

allows extremely high packing densities. It is possible to connect up to 144 fibers in a 19" rack installation, using only 3 rack spaces, **making the E-2000™/3U one of the most compact modules.**

Compact module – ordering code

KPM3					Compact module 3U
	7U-				7 sub units with multi-fiber loose tube entrance
		FLSH-			Assembled with E-2000™ pigtailed
		FSC-			Assembled with FSC pigtailed
		FST-			Assembled with FST-HQ pigtailed
		FCPC-			Assembled with FCPC pigtailed
		FSCD-			Assembled with FSC Duplex
		FLC-			Assembled with FLC pigtailed
		LX5-			Assembled with LX.5 pigtailed
		FMTJ-			Assembled with MT-RJ pigtailed
			12		Pigtail amount
				A	Singlemode HRL (APC 8°)
				B	Singlemode PC
				C	Multimode 50 μm
				D	Multimode 62.5 μm
KPM3	7U-	12	.	Order Number
Compact module accessories:					
Blanking plate 7TE					KPM3-BLD-7TE
Rack unit					KPM3-BGT-7TE
Guiding channel					KPM3-RANG-001
Conveyor tray					KPM3-UEB-001

Fiber Optic Inspection Set



The E-2000™ inspection set includes the necessary devices for the expertise and the cleaning of fibre optic connectors in the field. The application possibilities of the inspection set includes the installation, the operation and the maintenance of fibre optic networks. The inspection set components can be used as well for multimode as for single-mode applications.

Content:

- cleaning clothes, 200 pcs.
- microscope, 400 times magnification
- adapter E-2000™
- cleaning brushes
- 1 bottle isopropyl alcohol
- red light source
- air pressure bottle

Ordering table fibre optic inspection set

Description	Article no.
Fiber Optic Inspection Set	24300789

SUHNER=Registered Trade Mark

**HUBER+SUHNER group is certified
according to ISO 9001 und 14001.**

Waiver

While the information contained in this folder has been carefully compiled to the best of our present knowledge, it is not intended as representation or warranty of any kind on our part regarding the fitness of the products concerned for any particular use or purpose and neither shall any statement contained herein be construed as a recommendation to infringe any industrial property rights or as a license to use any such rights. The fitness of each product for any particular purpose must be checked beforehand with our specialists.

E-2000™ is manufactured under license of Diamond SA, CH-6616 Losone.



HUBER+SUHNER AG
Netconnect Division
CH-9100 Herisau
Tel. +41 (0)71 353 41 11
Fax +41 (0)71 353 46 47
www.hubersuhner.com