

Optical Lens Connector

Introduction

The OECA GmbH is involved in the development and production of Expanded Beam Connectors for several years.

Expanded beam technology is a special field of our fibre optic product range.

Meanwhile this product class involves several connector types featuring 1 to 8 channels.

The connectors are offered in different configurations.

We are going to extend the assortment permanently to meet the requirements of our customers.

A team of engineers is employed to design innovative products for future applications

The Product

OECA Expanded Beam Connectors are simple removable, low-loss, hermaphroditic connecting devices for fibre optic transmission systems.

The lenses are coated for optical transmission at 850 and 1300 nm

With the expanded beam technology, the connector is insensitive to contamination and environmental influences compared to direct fiber links.

Its durable design makes the connector usable for rugged handling. A reliable optical interconnection is reached by screwing of a double trapezoidal thread. This makes the connector especially suitable for extreme environmental conditions.

Main features of the connector are:

- field assembling
- single channel adjustment
- precision inserts (ARCAP)
- rugged aluminum housing
- resistant EPDM sealing

The Application

The products of the LS series are requested for a reliable optical interconnection under harsh environmental conditions.

The OECA Expanded Beam Connector has been developed especially for data communication.

It is principally involved in mobile video-systems or computer networks.

Main applications of the Expanded Beam Connector are:

- mining
- geodesy and geology
- traffic systems (railways)
- military telecommunication
- common field applications

Product Summary

The products of the LS series are available in 3 sizes.
 Protective caps and bulkheads for installation at the device boxes are additionally offered.
 Several combinations of optical and electrical channels are possible in the multi-channel connector-sizes LS 40 and LS 80.

Size	Size LS10	Size LS40	Size LS80
Product	LS10	LS40-2 LS40-4 LS40-2/2	LS80-4/4 LS80-6; LS80-6/2; LS80-2/6 LS80-8

The first number following the cross line announces the number of optical channels, the second of electrical channels.

Product Feature

Protective window

The products are available with optical inserts including an additional protective window.
 The window is coated for 850 and 1300 nm

Termination

The connector is offered for self-assembling by the customer.
 Assembling at the OECA GmbH is also possible; this way the high quality of the product is guaranteed involving end testing.
 For termination, single mode FC ferrules have to be used, according the instruction sheet.

Cable

For termination, OECA uses customer's cable or a commercially available indoor or outdoor cable.
 (according DIN VDE 0888)
 Please ask us for a special offer or contact our sales managers or OECA directly.

Optical single inserts

The optical inserts are interchangeable.
 Inserts for single mode fibers or inserts with different optics or specially coated lenses are also to be assembled into the connector
 The single inserts are also usable in other connectors then the OECA standard.

Active components

The bulkheads are available with assembled receiving and transmitting diodes of the OECA assortment.
 It is possible to assemble other products depending on their dimensions characteristics.
 Please contact our engineers with your needs for more information

Special design

Many customers need a product especially adapted for their very special applications.
 Based on the standard connector different body materials are as possible as constructive variations to meet the requirements of specific environmental conditions or to adapt to alternative cable.
 Our specialists will help you to clarify the technical possibilities and to find an attractive solution for your problem.

Characteristics

Optical inserts

- Lens coated for 850 /1300 nm
- Fiber 50/125µ; 62.5/125µ; 100/140µ; or 200/230µm
- Insertion loss 1dB typ., 2dB max. (1300nm, LD)

Electrical inserts

- type I 0...24 V
- type II 6A/220V (1.5mm cross section)
- MIL. inserts on request

Parameter	Standard	
Operation Temperature		-40 ... +85 °C
Storage Temperature		-55 ... +85°C
Water proof	EC 68-2-18Re	5m
free fall	IEC 68-2-32 Ed	500x(min.), height 0.5 m
vibration	IEC 68-2-Fc	10g/0.75Ampl./10-500 Hz
low pressure	IEC 68-2-13M	4 days min.
mate ability		3000 x
salt mist (storage)	IEC 68-2-11 Ka	4 days (min)
dust (storage)		4 days (min)
cable strain relief		2000 N ^{Note 1}

Note 1 depends on applied cable