Fiber optics

ODC harsh environment assemblies

Edition 2008/2009

HUBER+SUHNER

Excellence in Connectivity Solutions

Solutions for harsh environments

HUBER+SUHNER fiber optic products for harsh environment are designed to withstand severe mechanical loads, high thermal exposure, and demanding environments like rain, salt and splash water. ODC harsh environment cable assemblies are installation-friendly for fixed or mobile applications and transmit reliably data over long distances under severe environmental conditions.
Further, optical links guarantee immunity against electromagnetic interference and voltage surges which are essential advantages for antenna feeder lines of mobile communication systems. The total electrical isolation also makes optical fibers a safer, spark-free media for use in hazardous mining or oil platform environments. All these advantages come at reduced weight, size and costs compared to other harsh environment solutions or conventional copper links.

HUBER+SUHNER
Excellence in Connectivity Solutions

Application examples

Fiber-to-the-Antenna (FTTA)

Latest and next-generation mobile communication systems (GSM, UMTS, CMDA2000, TD-SCDMA, WiMAX, LTE, etc.) deploy fiber-optic feeders to link the base station with the remote unit at the antenna mast. ODC harsh-environment assemblies are the industry's preferred choice with tens of thousands successful outdoor installations – month per month.

Automation and industrial cabling

ODC provides highest reliability and operating safety. The ruggedized design provides highest mechanical and thermal robustness which keeps the data lines alive even in case of shock, strongest vibration, or accidental misuse.

Surveillance systems

Security camera manufacturers choose ODC connectors for its compact size and robust design. ODC assemblies are easy to install even in areas difficult to access and provide highest installation safety.

Naval and ship building

The high corrosion resistance convinced both naval and civil ship builders to use ODC assemblies for on-board communication systems. The nickel plated connectors withstand humid and salty environments and guarantee life times of 20 years and beyond.

Broadcast

HUBER+SUHNER offers a range of mobile cabling systems and ODC assemblies for temporary cable installations required for the broadcasting of sport events, car racing, etc. and for temporary connections in case of natural hazards.

Product portfolio

Q-ODC

The push-pull connector (2 channels) is the smallest and most robust design in its class and sets a new standard in harsh environment connectivity.

ODC-2

This classic screwed connector is the industry's standard interface for mobile communication systems and for industrial applications.

ODC-4

Globally installed in Wimax systems and for industrial wiring

HUBER+SUHNER ODC harsh environment assemblies are compliant to IEC 61753-1 Cat. E (Extreme Environment) and to the Telcordia standard for hardened fiber optic connector assemblies GR-3120.

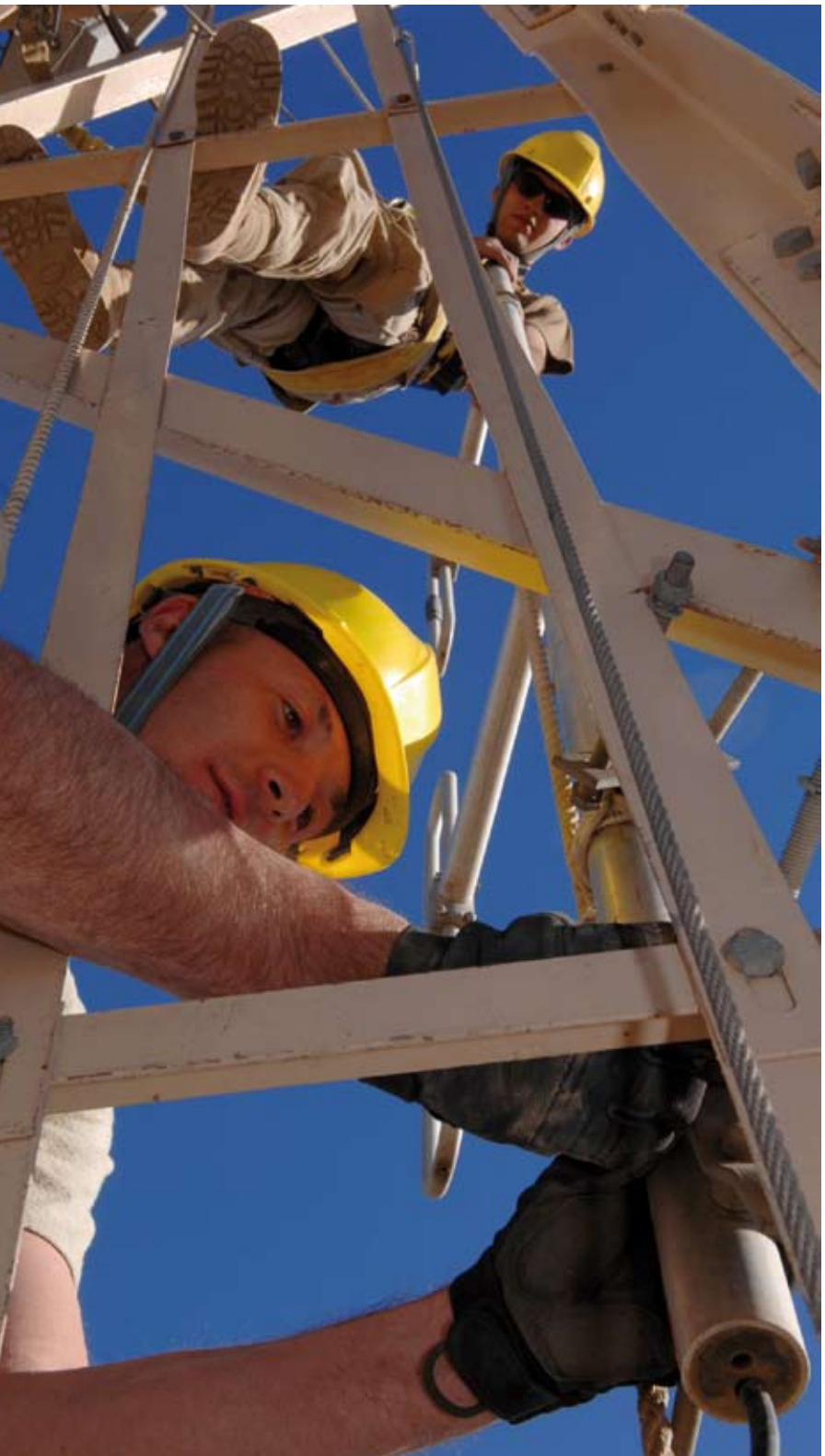
Q-ODC – The revolution for harsh environment connectivity

The Q-ODC push-pull connector sets a new standard for harsh environment connectivity. It is the smallest and most robust design in its class and has an outstanding coupling mechanism. The push-push mechanism allows easy and fast installation while at the same time it provides highest installation safety since only two defined mating states are possible – either mated or unmated – nothing else.

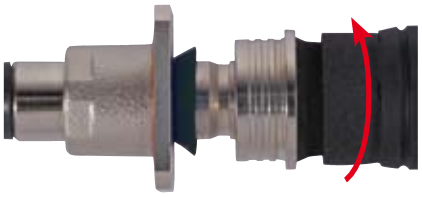
Key Features

- Robust pull-push coupling mechanism – fast and easy mating
- Highest installation safety
- Water proof IP68, dust proof and corrosion resistant
- 2 channels for singlemode or multimode
- Compact design with 2 × 1.25 mm ferrules
- Q-ODC plug connector, build-in socket and extension connector for cable chaining
- Nickel plated brass housing
- Water-proof protection caps
- RoHs compliant
- EMI protected

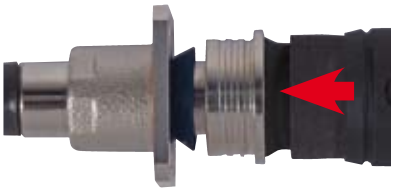
Quick mating and highest installation safety



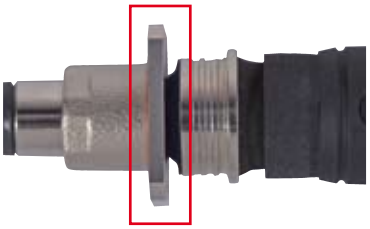
Push plug slightly into connector socket



Rotate to find keying position



Unmated – push connector to mate



Mated – connector snaps in and is fully strain relieved

Specifications

Housing material		nickel-plated brass
Technology		full ceramic ferrule and sleeve
Mechanical performance	Q-ODC Plug and Extension	≤ 450 N tensile load ≤ 20N static side load
	Q-ODC Socket	≤ 30 N tensile load
Operating temperature		-40°C up to +85°C
Mating durability	IEC 61300-2-2	100 cycles
Ingress protection		IP68
Salt mist	IEC 61300-2-26	30 day passed
Vibration	IEC 61300-2-1	passed
Shock	IEC 61300-2-9	passed

Optical performance

Insertion loss / IEC 61300-3-34	singlemode	typ. ≤ 0.2 dB	97% ≤ 0.45 dB
	multimode	typ. ≤ 0.2 dB	97% ≤ 0.50 dB
Return loss / IEC 61300-3-6	singlemode	≥ 50 dB	

ODC – the leading solution for mobile communication systems and industrial applications

Play it safe – ODC is the leading solution for harsh environment assemblies. Tens of thousands of ODC assemblies are installed under severe outdoor conditions every month. This makes ODC one of the most trusted and wide-spread harsh-environment connectors worldwide. Our customers benefit from the wealth of experience of a well established product. ODC is produced at seven international manufacturing sites yielding lowest cost at highest flexibility and product availability.

Key Features

- Robust fiber-optic connector for 2 and 4 channels with screwed mating mechanism
- IP68 protection, salt-mist proof, and EMI protection
- High shock, vibration, and mechanical resistance
- Broad temperature range and wide range of indoor and outdoor cables
- Easy, reliable and cost-effective installation

Extract of ODC connector types

ODC-2

Plug and square socket connector (also available as hexagonal or customized type).

ODC-4

Plug and square socket connector (also available as hexagonal or customized type).

All ODC assemblies have IP68 dust caps optional with or without mounting chain.

Specifications

Housing material		nickel plated brass
Technology		full ceramic ferrule and sleeve
Mechanical performance	ODC Plug	≤ 800 N tensile load ≤ 30N static side load
	ODC Socket	≤ 30 N tensile load
Installation torque force	min. 1 Nm	max. 2 Nm
Operating temperature		-40°C up to +85°C
Mating durability		min. 100 cycles
Ingress protection		IP68
Salt mist	IEC 61300-2-26	30 day passed
Vibration	IEC 61300-2-1	passed
Shock	IEC 61300-2-9	passed

Optical performance

Insertion loss / IEC 61300-3-34	singlemode	typ. ≤ 0.2 dB	97% ≤ 0.45 dB
	multimode	typ. ≤ 0.2 dB	97% ≤ 0.50 dB
Return loss / IEC 61300-3-6	singlemode	≥ 50 dB	

ODC – installation safety and on-site length flexibility

Operators and technical staff install ODC assemblies day after day under severe conditions and in harsh environments. ODC assemblies are known for their ease of installation and highest operation safety due to the robust and ruggedized design. The optical interface is always fully protected during installation and the ferrules can not be damaged by mishandling. Q-ODC further improves the installation safety since only two well defined mating states are allowed by the interface. All ODC cable assemblies are highly strain relieved, feature a high crush resistance and fulfil all environmental requirements.

Installation accessories

Overlength boxes to store cable excess length (up to 30m depending on cable diameter)

Mounting clamps for all types of cables and installations

Fiber cleaning tools for field and factory use

Fiber check tool

On-site length flexibility

ODC extension connectors allow robust and easy-to-install elongation of fiber-optic assemblies and can be used for chaining of ODC links, e.g., between mobile communication base stations and remote units. The product provides on-site length flexibility which can otherwise only be achieved with outdoor splice closures. The extension connection is fully strain relieved up to 800N.

Global manufacturing network

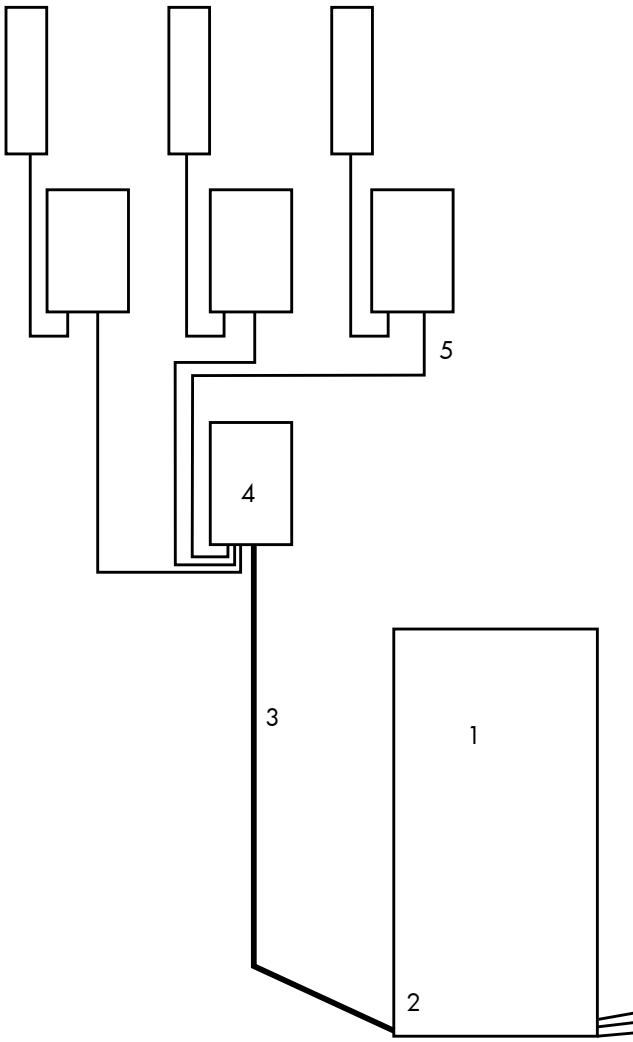
HUBER+SUHNER's global ODC manufacturing network guarantees best product availability in every region and minimizes the supply risk. The manufacturing network is aligned to serve both, high-volume forecast-driven demand by OEM›s, and flexible short-term demand by operators and installers. To achieve maximum supply flexibility, HUBER+SUHNER runs ODC express shops in every geographical region and is able to deliver cable assemblies at any length at short lead-times.

Fiber-to-the-Antenna (FTTA) installation for mobile communication systems

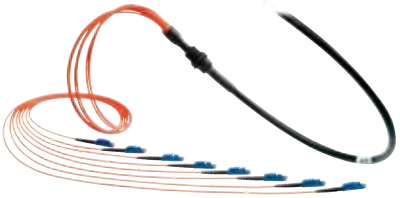
Next generation mobile communication systems (3G, Wimax, LTE) using remote radio heads yield considerable savings on operational costs (up to 40%) and reduction of capital expenditure for new network roll-outs and upgrades. The financial advantages for operators are the reasons for the rapid technology shift from conventional systems (using corrugated copper cable links) towards FTTA systems using fiber-optic links between the base station and the remote-radio head. HUBER+SUHNER is a global expert for FTTA installations and provides complete solutions ranging from planning, product definition, volume production, logistics to installation services. We directly support OEMs, global and local operators, and installers.

1 Base station

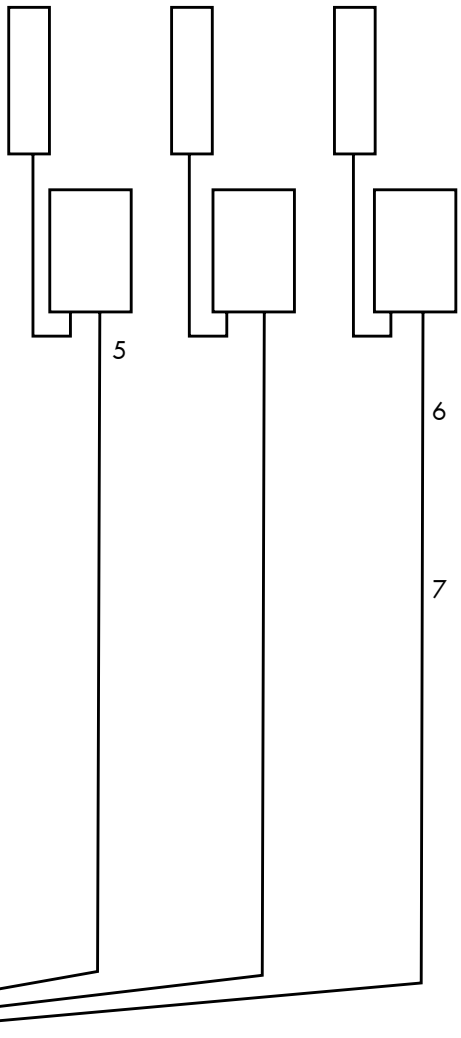
2 CTB 19" frame,
patched or spliced solution



3 MASTERLINE classic



4 Fiber-To-The-Antenna break-out box, patched or spliced solution



5 Factory terminated assemblies (ODC to LC, LC to LC) Plug-and-play installation on mast

6 Overlength boxes to store excess cable length up to 30 m

7 ODC extension assemblies for full length and installation flexibility.

HUBER+SUHNER is certified according to ISO 9001 and ISO 14001.

WAIVER

It is exclusively in written agreements that we provide our customers with warrants and representations as to the technical specifications and/or the fitness for any particular purpose. The facts and figures contained herein are carefully compiled to the best of our knowledge, but they are intended for general informational purposes only.

HUBER+SUHNER AG
Fiber Optics
Degersheimerstrasse 14
9100 Herisau Switzerland
Phone: +41 71 353 4111
Fax: +41 71 353 4444
info@hubersuhner.com

8406937/09.2008

hubersuhner.com/odc