# Radiall™

*Our Most Important Connection is with You.™*



## R2CT® Series

R2CT®

## Contents

## *Introduction*

# R2CT®: RADIALL 2 CONNECTORS TO TRANSCEIVER



### The Most Flexible Outdoor Interconnection Solution

The R2CT® connection system is the most flexible outdoor interconnection solution that meets the needs of telecommunication OEMs and operators for Fiber-To-The-Antenna (FTTA) and similar multisignal applications in the field conditions.

At the panel front of the Remote Radio Head (RRH) and Unit (RRU) equipment, the R2CT® provides a simple and protected low-cost waterproof and sealed connection.

Designed firstly for optical links using SFP transceivers and duplex LC-terminated fiber-optic cable, this very flexible connector is also useful for electrical links.

## APPLICATIONS

FTTA: Fiber To The Antenna

Outdoor Telecom

Industrial Connection



## INTERNATIONAL STANDARD DOCUMENTS COMPLIANCE

- IEC 61300: Fiber optic interconnecting devices and passive components
- IEC 60068: Environmental testing
- IEC 60529: Degrees of protection provided by enclosures (IP code)
- RoHS compliant



## FEATURES AND BENEFITS

### Flexible and Modular

- Kit assembles in the field over existing optical patchcords
- Compatible with any standard optical LC field cable assembly
- Compatible with any standard SFP transceiver
- Reusable allowing cables and transceivers to be easily changed in the field, including front-panel swapping of transceivers
- R2CT® connection system can easily be used for other Ethernet and multisignal applications: compatible with RJ45 patchcords and USB connections

### Robust and Easy to Install

- Double bayonet locking system ensures mechanical connection, allowing a tool less hand-tightened connection
- Kit assembled in the field without tools
- Designed to withstand climatic working conditions of outdoor field applications
- Plug assembly includes a protection cap that can be used for pulling cable

### Mechanical and Environmental Protection

- Waterproof
- Dustproof
- Important tensile strength

### Low Cost

## Characteristics

R2CT® connector has been designed to fulfill the qualification requirements of IEC 61300 standard (for fiber optic interconnection devices)

## MECHANICAL CHARACTERISTICS

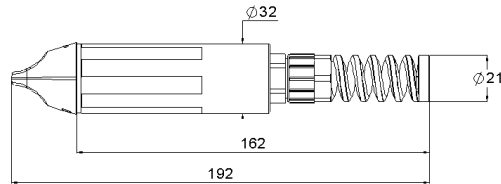| Cable retention | 200 N |
|---|---|
| Mating endurance | 100 mating cycles minimum |

## ENVIRONMENTAL CHARACTERISTICS

| Ingress protection class | IP65 or IP67 |
|---|---|
| Operating temperature | -40°C/+85°C |
| Storage temperature | -40°C/+85°C |
| Salt mist | IEC 61300-2-26 passed |
| Vibrations | IEC 61300-2-1 passed |

## *Product Range*

R2CT® solution is available as a component (Plug Kit) to fit in the field on any conventional LC or SC optical connector or as a complete cable assembly.

A short version of the R2CT® Plug Kit has also been developed with reduced overall dimensions, which is especially well adapted to electrical links such as RJ45 connections or optical multichannel (MPO).
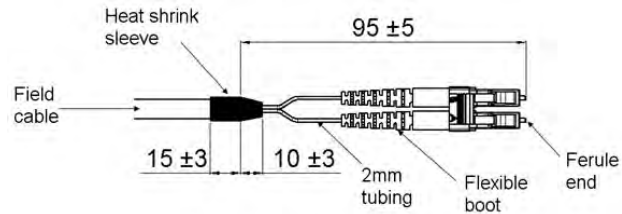
### R2CT® STANDARD PLUG KIT

| Part Number | Description | Packaging |
|---|---|---|
| R2CT 115 000 | Plug connector only; no patchcord | Unitary in plastic bag with assembly note |

The R2CT® Plug Kit is adapted to all types of optical cable assemblies with simplex or duplex LC connectors, simplex SC, and with 5 to 7 mm diameter MultiMode or SingleMode field cables.

To guarantee proper operation when the R2CT® Plug Kit is assembled over existing LC Duplex optical patchcords, the following fan-out dimensions should be observed:

We recommend to use a torque wrench (Radiall PN: R282 303 230) set at 3.5 to 4 Nm to guarantee 200 N tensile strength.

The standard R2CT® Plug Kit can also be used with existing SC simplex patchcords:

## R2CT® SHORT PLUG KIT

The R2CT® Short Plug Kit can fit with any type of electrical Ethernet RJ45 cables with diameters from 5 to 7 mm or optical multichannel MPO cable assemblies.

R2CT® Short Plug Kit connector exists in IP67 version or in IP65 version with split gasket for full assembly in the field.

It is delivered with a pulling nose which protects the connector interface and can include a disconnection clip to disconnect the RJ45 connector of its socket.
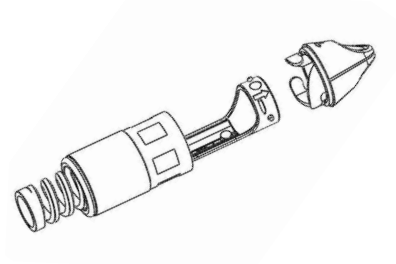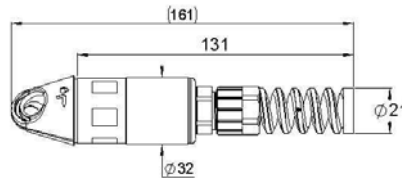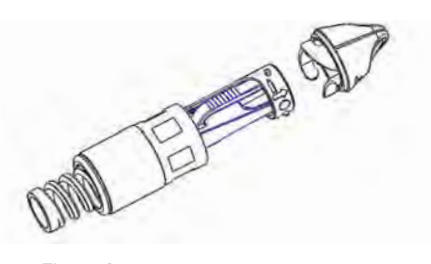
Figure 1

Figure 2

| Part Number | Figure | Description | Packaging |
|---|---|---|---|
| R2CT 125 000 | 1 | Kit IP65 Protection (no clip)<br>Plug connector only; no patchcord | Unitary in plastic bag<br>with assembly note |
| R2CT 125 001 | 2 | Kit IP65 Protection With Disconnection Clip<br>Plug connector only; no patchcord | |
| R2CT 127 000 | 1 | Kit IP67 Protection (no clip)<br>Plug connector only; no patchcord | |
| R2CT 127 001 | 2 | Kit IP67 Protection With Disconnection Clip<br>Plug connector only; no patchcord | |

The R2CT® Short Plug Kit can be used easily for RJ45 or MPO connection links:
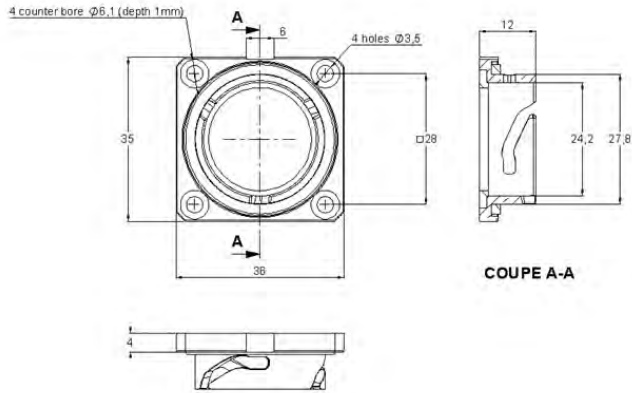
R2CT 127 001 mounted on
RJ45 patchcord

R2CT 125 000 with MPO
connection

## R2CT® STANDARD RECEPTACLE

Fixed to the panel of the equipment by four screws, the R2CT® standard receptacle allows an easy access to connect the signal to SFP transceivers for optical links or to RJ45 sockets for Ethernet links.



The R2CT® receptacle is supplied with the protection cap installed.
Two possible configurations: red vinyl cap (protection IP65) or aluminium protection cap (IP67).

| | Part Number | Description | Panel Cut Out |
|---|---|---|---|
|  | R2CT 105 000 | Receptacle with red vinyl protection cap | |
|  | R2CT 107 000 | Receptacle with metal protection cap |  |
|  | R2CT 107 018 | Receptacle with metal protection cap with chain | |

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## R2CT® RECEPTACLE WITH LC ADAPTER

A variation of the R2CT® receptacle has been developed to include a LC adapter to allow the R2CT® interface to be used with equipment in which the SFP transceiver is inside the box (RRU of first generation, etc).
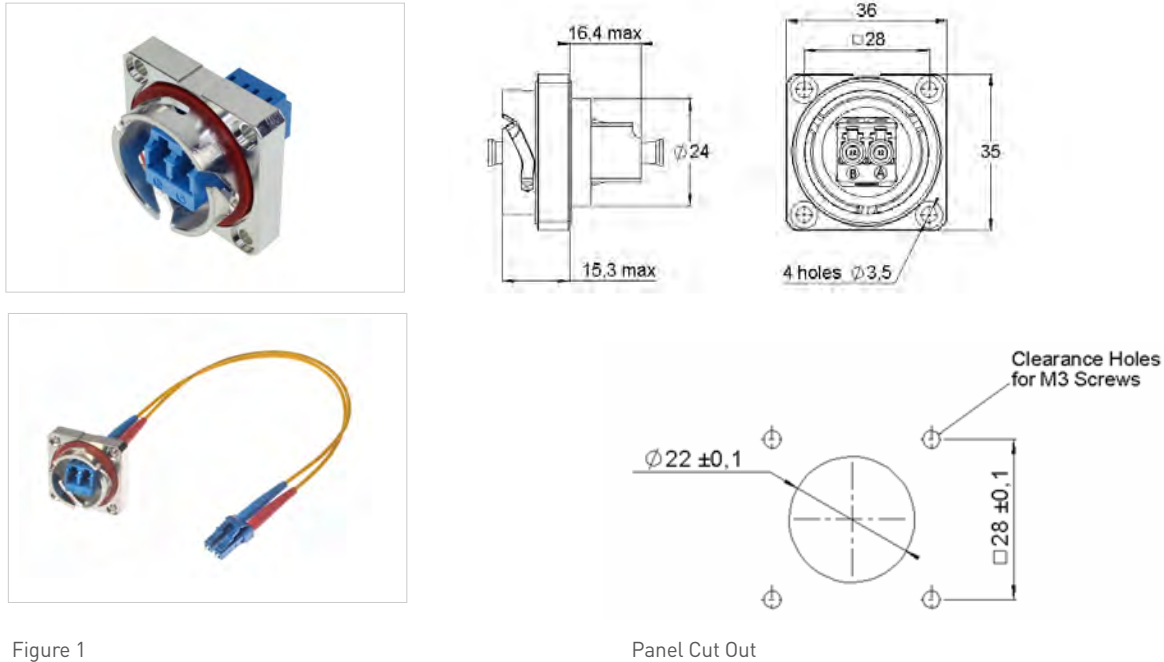


Figure 1



Panel Cut Out

| Part Number | Figure | Description | Packaging |
|---|---|---|---|
| R2CT 107 100 | 1 | R2CT® receptacle with LC duplex adapter and LC duplex patchcord, SingleMode – IP67 | Per 50 pces |
| R2CT 107 200 | 2 | R2CT® receptacle with LC duplex adapter, no patchcord SingleMode – IP67 | Per 56 pces |
| R2CT 107 300 | 3 | R2CT® receptacle with LC duplex adapter, no patchcord MultiMode – IP67 | Per 56 pces |



Figure 2          Figure 3

**R2CT**

## R2CT® FIELD ADAPTER PLUG-PLUG

This product allows the connection of two R2CT® Plug cable assemblies in the field. It includes a standard LC duplex adapter in MultiMode or SingleMode versions.

Two metal Aluminium protection caps protect each side of the R2CT® field adapter and provide a robust solution in outdoor conditions.



| Part Number | Description | Packaging |
|---|---|---|
| R2CT 157 000 | Field Adapter R2CT® Plug-Plug, with LC duplex adapter, metal cap MultiMode – IP67 | Per 30 pces |
| R2CT 157 001 | Field Adapter R2CT® Plug-Plug, with LC duplex adapter, metal cap SingleMode – IP67 | Per 30 pces |



Illustration of use: R2CT® Plug Kit
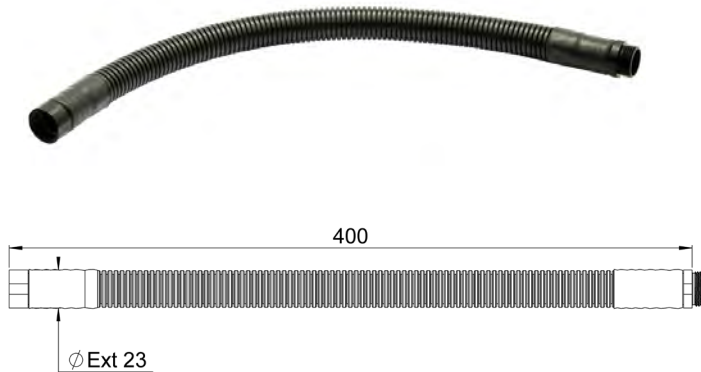fiber optic cable connected to field adapter

## Tools and Accessories

### R2CT® ADAPTER N-RJ45

For needs of measurement and control of the RRU and RRH equipment in FTTA applications, a specific version of R2CT® has been developed to adapt the RJ45 connection signal to a coaxial signal with standard N interface.

| Picture | Figure | Part Number |
|---------|--------|-------------|
|  |  | R2CT 135 000 |

### R2CT® EXTENSION KIT



This component allows the use of the standard R2CT® Plug Kit with existing optical patchcords where the fan-out is longer than the one that is recommended to guarantee the solution work properly (95 mm ± 5).
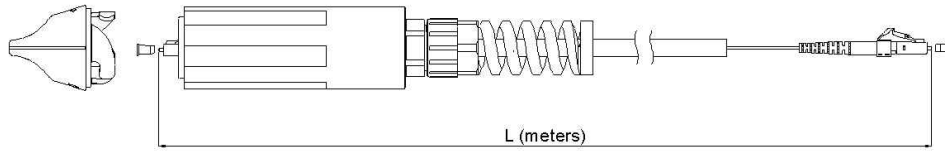
The R2CT® Extension Kit can fit with outdoor cable assemblies including 5 to 7 mm diameter field cables, with a fan-out dimension of up to 450 mm long.

It is mountable in the field and has to be inserted between the R2CT® Plug Kit body and the nut cable gland to guarantee a sealed and robust complete link.

| Part Number | Description | Packaging |
|-------------|-------------|-----------|
| R2CT 945 000 | Extension Kit (plastic) IP67  Temperature range from -40°C to +85°C | Unitary |

**R2CT**

## R2CT® PRE-MOUNTED OPTICAL CABLE ASSEMBLIES



Any configuration for a cable assembly with R2CT® is available on demand:
- Field cables with diameters of 5 to 7 mm on standard.
- Standard LC connectors (R2CT® side)
- Any possibility of optical connectors on the opposite side (LC, SC, FC, ST, etc.)
- Simplex or duplex connectors
- MultiMode (50/125 or 62.5/125 on request) or SingleMode (9/125) cable
- Polishing/finishing: PC or APC

## OPTICAL CHARACTERISTICS

| Insertion Loss (mated with reference plug)<br>(@1310 & 1550 nm) | 0.5 dB max |
|---|---|
| Return Loss<br>(@1310 & 1550 nm) | RL>45 dB |

Please refer to Section 9, Cable Assemblies & Optical Systems, for more information.

## R2CT® PRE-MOUNTED ON RJ45 CABLE ASSEMBLIES



Pre-assembled R2CT® plug with RJ45 on outdoor patchcord.

R2CT® cable assemblies with RJ45 connectors on 5 to 7 mm diameter cables are available in any length on demand.

## *Cable Assemblies*

## PATCHCORDS



LC patchcords



RJ45 pachcord

Radiall can also provide any configuration of LC optical patchcords or RJ45 patchcords for use with the R2CT® Plug Kit.

Please refer to Section 9, Cable Assemblies & Optical Systems, for more information.