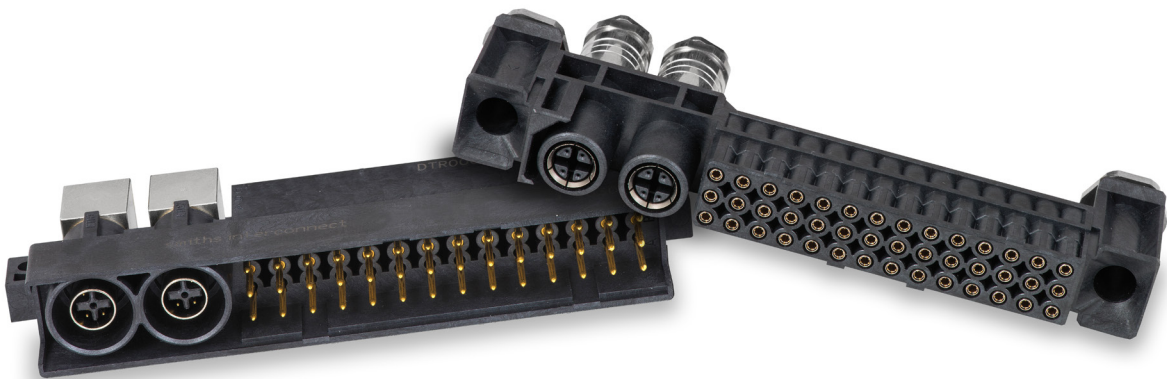


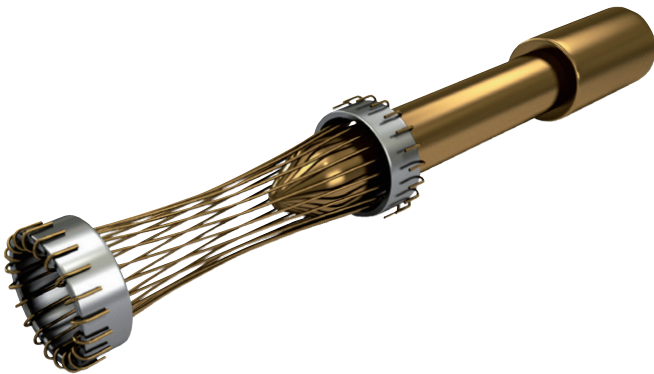
# INTERCOMPACT Series

Compact Signal & Ethernet PCB connectors



# Available Contact Technologies *(Features & Benefits)*

## Hypertac® Hyperboloid contact



### ■ Long Contact Life

Industry-leading mating cycles (over 100,000) provide low cost of ownership

### ■ Low Insertion / Extraction Forces

Ergonomic mating without mate assist hardware for cost and space saving

### ■ Lower Contact Resistance

Low power consumption / lower voltage drop across connector

### ■ Higher Current Ratings

Smaller contacts needed to carry power reduce size and weight

### ■ Immunity to Shock & Vibration

Reliability under harsh environmental conditions

### ■ 360° Contact Wipe

Self-cleaning contacts assure uninterrupted connection

### ■ Restricted materials

RoHS compliant with Exemption 6c

## Quadrax contact



### ■ Contact layout

Consist of an outer shield with four inner paired conductors forming two 100 Ohm, controlled impedance differential pairs

### ■ High speed

Designed for transmission of Ethernet high speed signal up to 100 MHz in harsh environments where integrity and reliability are essential

### ■ Ethernet standard

Ethernet 10-Base-T / 100-Base-Tx - Category 5E

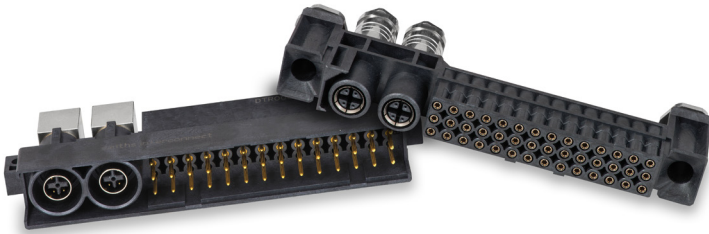
### ■ Cable features

Cable cross section 4 x 0,25 mm<sup>2</sup> (AWG24), performance of 100 Ohm between 1 to 100MHz.

### ■ Restricted materials

RoHS compliant with Exemption 6c

# INTERCOMPACT Series



The Intercompact Series is Smiths Interconnect's answer to the rail and industrial market growing demand for compact, high-speed, and reliable connectivity for ECU boxes, in the respect of severe material and electric current requirements.

The new generation of Electronic Control Unit boxes requires a sophisticated interconnect solution able to support steadily all I/O signals that the advanced devices handle.

The Intercompact Series is an innovative solution for PCB to PCB and floating routing rack and panel applications currently offered in both signal and Ethernet versions. Designed to meet the requirements of the rail and industrial environments, it is also suitable for other demanding markets such as defence, space and test & measurement.

Optimized and qualified for the next generation of Electronic Control

## Features & Benefits

- 60 and 41 way signal configurations with Hypertac® Hyperboloid contacts.
- 42 ways signal and 1 or 2 high speed quadax 100 Ohm contacts as Ethernet versions. Additional contact positions can be offered depending on the specific application requirements.
- Compliance with the main European Railway standards (EN45545-2, NF F61030, EN50155:2017, STM-S-001ind.D and more).
- Compliance with MIL-C-28748 and MIL-STD-202-301 standards and EIA and IEC standards for Contact Resistance and Environmental testing.
- Insulators in Liquid Cristal Polymer material for an optimized insulation resistance in severe environmental

# Technical Characteristics

|                             | Signal configurations            | Ethernet configurations                                     | Standards |
|-----------------------------|----------------------------------|---|-----------|
| <b>Contact Arrangements</b> | Up to 60                         | Up to 42 hyperboloid contacts<br>Up to 2 quadrax contacts   |           |
| <b>Contact Diameter</b>     | Ø 1.02 mm (0,402 in)             | Ø 0.35 mm (0,014 in) for<br>quadrax internal female contact |           |
| <b>Contact Technology</b>   | Hypertac® Hyperboloid<br>sockets | Quadrax contacts  |           |

## Materials & Platings

|                  |                              |  |
|------------------|------------------------------|--|
| <b>Contacts</b>  | Gold over nickel plating     |  |
| <b>Insulator</b> | Liquid Cristal Polymer (LCP) |  |

## Mechanical & Environmental

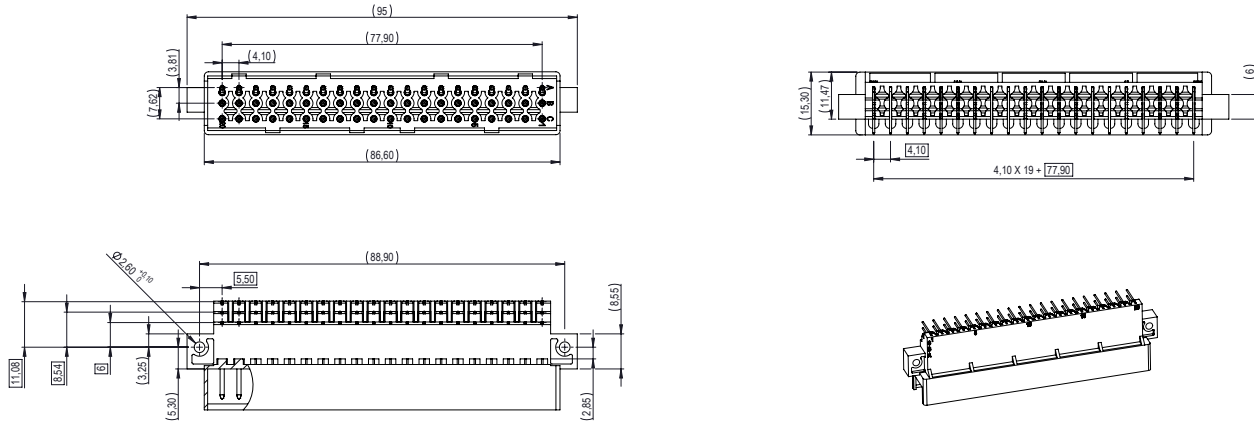
|                          |  |            |
|--------------------------|--|------------|
| <b>Mating Cycles</b>     | > 500 cycles                                     | NFF61-030  |
| <b>Temperature Range</b> | - 55°C to 125°C                                  | -          |
| <b>Vibration</b>         | Category 1 Class B + Category 2                  | EN 61373   |
| <b>Flammability</b>      | HL3 - R22  | EN 45545-2 |
| <b>Salt Spray</b>        | > 96 hours                                       | NFF61-030  |
| <b>Fluid Resistance</b>  | Gas Oil, Mineral oil, Hydrochloric Acid and Base | NFF61-030  |

## Electrical

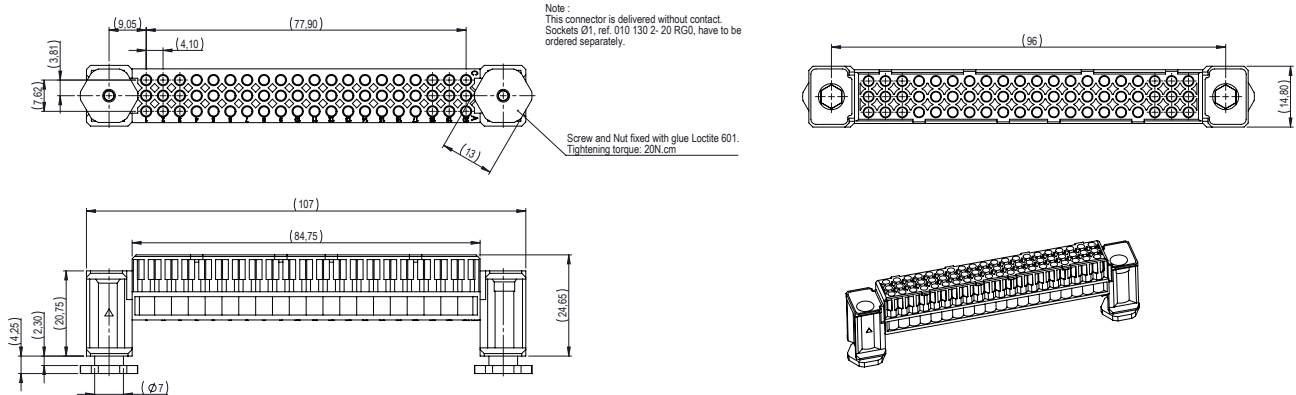
|  |                 |                    |                     |
|--|-----------------|--------------------|---------------------|
| <b>Current Rating</b>                  | 3 A per contact | 0.75 A per contact | -                   |
| <b>Nominal Voltage</b>                 | 110 V DC        | 72 V DC            | EN 50124-1, OV2 PD2 |
| <b>Dielectric Withstanding Voltage</b> | 1500 V DC       | 800 V DC           | EN 50124-1, OV PD2  |
| <b>Contact Resistance</b>              | < 4,5 mΩ        | < 200 mΩ           |                     |
| <b>Insulation Resistance</b>           | >100 GΩ         | >100 GΩ            |                     |

# Signal configuration

## 60 Signal Way Plug

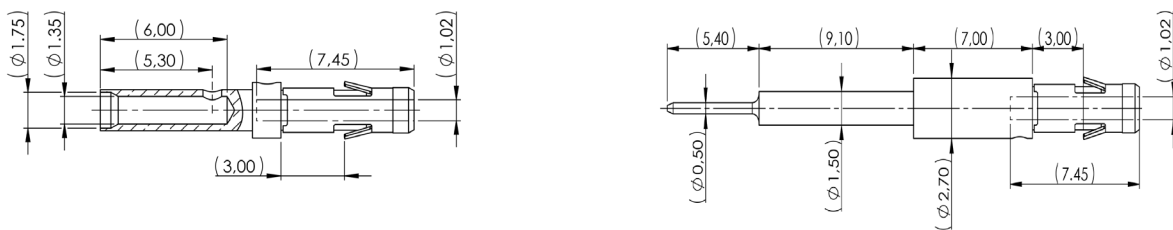


## 60 Signal Way Receptacle



## Hyperboloid socket contacts

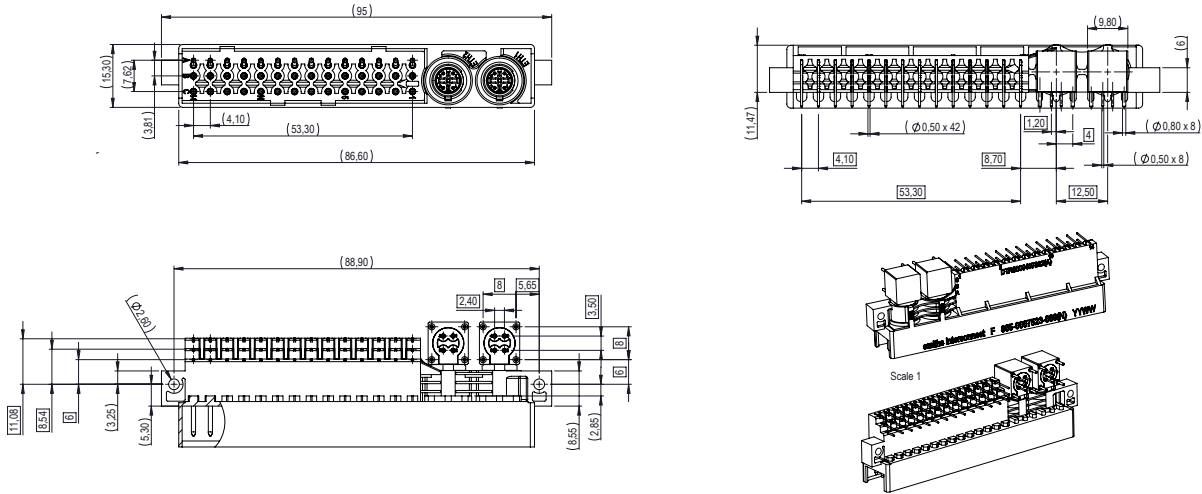
Ref: 0101302-20RGO and 0101322-30RGO



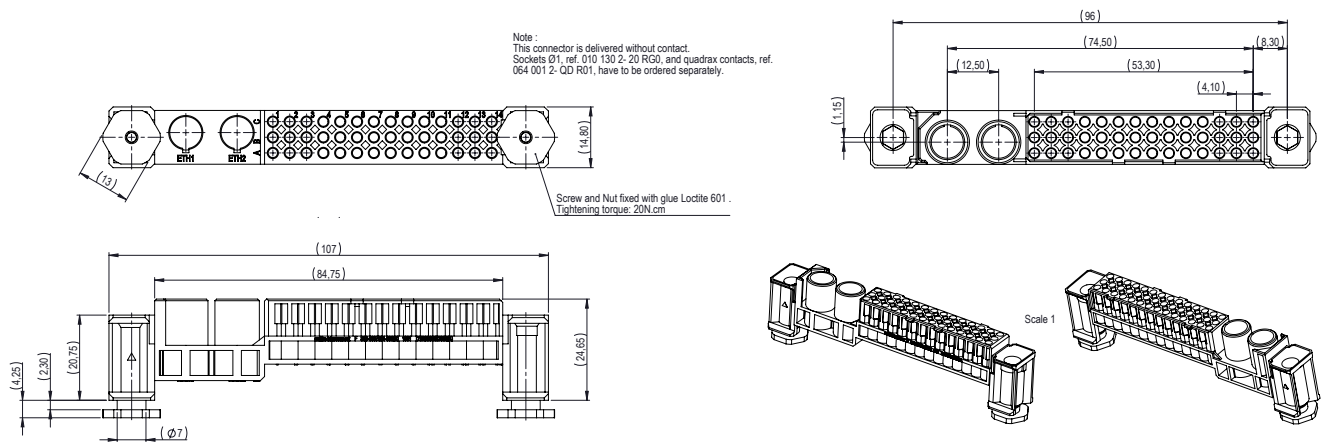
Dimensions are in mm

# Signal & Ethernet configuration

## 42 Signal & 2 Quadrax Way Plug

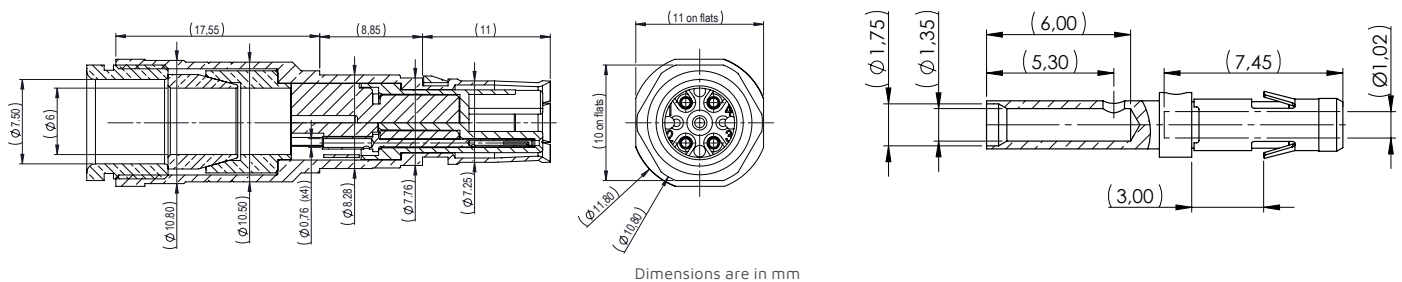


## 42 Signal & 2 Quadrax Way Receptacle



## Quadrax and Hyperboloid socket contacts

Ref: 0640022-QDR01 and 0101302-20RG0



# How to Order



|                              |   |
|------------------------------|---|
| <b>1 Series</b>              | <b>ITC</b> Series (fixed)   |
| <b>2 Contact type</b>        | <b>S -</b> Only signal contacts<br><b>SE</b> Signal and Quadrax contacts  |
| <b>3 Connector type</b>      | <b>P</b> Plug<br><b>R</b> Receptacle  |
| <b>4 Contact positions**</b> | <b>060 - 00</b> 60 signal ways for Plug only**<br><b>060 - 00</b> 60 empty signal ways for Receptacle only***<br><b>042 - 00</b> 42 signal ways and 2 empty quadrax ways for Plug only**<br><b>042 - 00</b> 42 empty signal ways and 2 empty quadrax ways for Receptacle only***<br><b>042 - 11</b> 42 signal ways and 2 quadrax contacts (cavity n°1 + 2) for Plug only**<br><b>042 - 10</b> 42 signal ways and 1 quadrax contact (cavity n° 2) for Plug only**<br><b>042 - 01</b> 42 signal ways and 1 quadrax contact (cavity n°1) for Plug only** |
| <b>5 Termination style</b>   | <b>00</b> Without contacts (Receptacle only)<br><b>10</b> 90° PCB tail solder for sockets and pins (Plug only)<br><b>20</b> Crimp contact for sockets (Receptacle only)<br><b>30</b> Straight termination for sockets (Receptacle only)   |
| <b>6 Fixing system</b>       | <b>00</b> Without fixing (Plug only)<br><b>01</b> Floating fixing (Receptacle only)<br><b>02</b> Threaded (Receptacle only)   |
| <b>7 Version</b>             | <b>S</b> Standard<br><b>R</b> Rail Serial Test according to NFF61-030   |

\*For different contact configurations please contact the factory.

\*\* Plugs are sold equipped with contacts.

\*\*\* The receptacles are delivered without contacts. To order the contacts separately for the other parts please refer to page 5 and 6.

Crimping tool: DMC FT8, Turret TP1848

# Worldwide Support

## Connectors

### Americas

#### Sales

connectors.uscsr@smithsinterconnect.com

#### Technical Support

connectors.ustechsupport@smithsinterconnect.com

### Europe

#### Sales

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#### Technical Support

connectors.emeatechsupport@smithsinterconnect.com

### Asia

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asiacsr@smithsinterconnect.com

#### Technical Support

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## Fibre Optics & RF Components

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#### Technical Support

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#### Technical Support

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## Semiconductor Test

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#### Technical Support

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### Asia

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#### Technical Support

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## RF/MW Subsystems

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#### Technical Support

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# Connecting Global Markets

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