



We change the shape of the world

Technologiepark 9, D-33100 Paderborn

Declaration of Conformity:

NovaTec Kommunikationstechnik GmbH declare under own sole responsibility that the products PT-US/PT-SU are in conformity with the provisions of following european council directive: 1999/5/EC (R&TTE-Directive).

The corresponding declarations and documents are deposited at the manufacturer.

Important Safety Requirements:

- The PT is not intended for connection to a public telecommunication network.
- The Guideline must be handed over with the equipment.

Please note:

- Before installing the **PT**, ensure that all devices being connected to the **PT** system provide galvanic separation from other telecommunication devices or lines resp. the main power supply (230~).
- If outdoor cabling or line is connected to the **PT**, gas discharge protection elements are required and have to be installed at the outer terminating point.
- The **PT** is not intended for connection to a public network.
- The guideline must be handed over with the equipment.
- This unit includes a warranty (1 year) on functionality in case of manufacturing failure. This warranty expires in case of wrong installation, transportation, mishandling or opening.

The **PT** is a transmission system for extending an S₀-connection.

This transmission system consists of two units:

- **PT-SU** (for S₀ to U₀ conversion)
- **PT-US** (for U₀ to S₀ conversion).

Operating the PT

There are two different versions of the **PT** available: one is with internal power supply and built in main connector. The second one needs an external power supply. The input voltage is 12 V DC. The jack connector which is connected to the **PT** (Version 2) has to be connected to +12 V at the tip and 0 V at the shaft. Each version may be obtained in several different options (see information on back). The **PT-SU** conducts the voltage from the S₀ bus to the U₀ interface via two internal 4K7 Ω resistors. The **PT-US** may be switched between standby and active modes by the voltage on the U₀ interface. The **PT-US** automatically switches to active mode when the voltage on the U₀ interface exceeds ≥ 40 V, whereupon the voltage supply for the **PT-US**'s S₀ bus is also activated. This watchdog function may be disabled through an internal jumper on the **PT-US**'s mainboard. (This is the factory preset only for option 4 of models: 2F3101, 2F3201, 2F3401 and 2F3501).

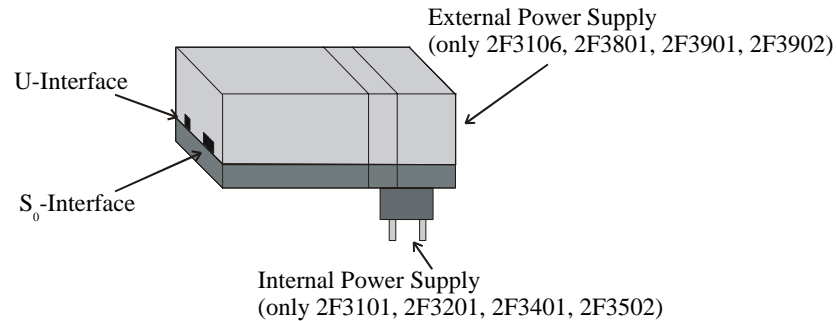
Jumper	Operation	Comments
connected	active	Monitoring function activated.
not connected	passive	Monitoring function deactivated. Power is always supplied to the PT and the S ₀ bus (state of delivery).

A configuration jumper on the **PT-US** add-on card is used to change the S₀ interface from bus function to point-to-point function. The point-to-point mode is used for point-to-point protocols and extended S₀ bus. The bus mode is used for the short bus.

Jumper	Operation	Comments
connected	point-to-point	for long distances up to 1000 m
not connected	bus	for the operation of several terminals on one bus. Range max. 550 m depending on bus configuration (state of delivery).

Connecting the PT to the wiring system

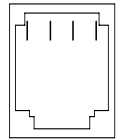
To connect the **PT** to the wiring system flexible cords and fixed wall sockets must always be used (see drawing below).



Connector pinout

U₀ interface

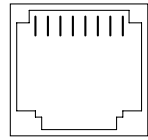
1.....4



Front view of socket

S₀ interface

1.....8



Front view of socket

Pinout (RJ9 4-pin socket)

PT-US/PT-SU

1 – not connected

2 - a-wire

3 – b-wire

4 – not connected

Pinout (RJ45 8-pin socket)

PT-US

PT-SU

1 – not connected

2 – not connected

3 - Ra* Ta

4 - Ta* Ra

5 - Tb* Rb

6 - Rb* Tb

7 – not connected

8 – not connected

PT-US: only for 2F3101 and 2F3401 the connectors carry the following potentials:

Ra, Rb: +40 V

Ta, Tb: 0 V

*Ra, Rb, Ta and Tb: each end is terminated with a 100R resistor.

Technical Data

The U₀ interface is specified according to 2B1Q standard (ANSI T1.601), and the S₀ interface according to I.430.

Mechanical data

2F3101, 2F3201, 2F3401 und 2F3501:

Dimensions (depth x width x height):

8.8 cm x 6.7 cm x 12.5 cm.

Weight: approx. 0.4 kg.

2F3801, 2F3901 and 2F3902:

Dimensions (depth x width x height):

5.1 cm x 6.7 cm x 12.5 cm.

Weight: approx. 0.23 kg.

Storage:

Temperature: 0° - 70° Celsius.

Humidity: 70 % not condensing.

Electrical data:

Output voltage (TE side) with local powering:
42 V₌ without load and 36 V₌ with 80 mA load.
All 2F3801, 2F3901 und 2F3902 cannot power the U or S/T interface. 2F3206 powering on the U interface 60 V 15 mA

Input voltage for local powering:
115 - 230V~ ± 10 % for 2F3201; 230 V~ ± 10 % for 2F3101, 2F3401 and 2F3501.
12 V DC for 2F3801, 2F3901 and 2F3902.

Max. continuous input current for **PT-US/SU** at 115 V~: 18mA for 2F3201; 230 V~: 38 mA for 2F3101, 2F3201, 2F3401 and 2F3501 at 12 V₌: 100 mA for 2F3801, 2F3901 and 2F3902.

Transmission range of U₀ = 0 - 10 km depending on cable type and noise margin;

Transmission range of S₀ = 0 - 1.5 km depending on bus mode and cable type.

Ordering

Name of assembly	Order number	Options:
U₀ (2B1Q) with main connector		
PT-US	2F3101	01 only with local powering
PT-SU	2F3201	02 with local and remote power supply
PT-UU (Repeater)	2F2100	03 without remote power supply but with looping of the U ₀ -voltage to the S ₀ side (on pin 1 and 8 of the RJ45 socket)
U₀		
PT-UpS	2F3401	04 disconnection of the S ₀ voltage and/or the operating voltage of the PT-US on availability of the S ₀ - voltage on the PT-SU side.
PT-SUp	2F3501	
U₀ supplied with 12 V /48 V		
PT-US	2F3801	
PT-SU	2F3901	
PT-SU*	2F3902	
PT-UU (Repeater)	2F2101	
Further Variants	on request	
Connecting cords		
(U ₀ -Schnittstelle)	2F4011	
(S ₀ -Schnittstelle)	2F4009	

* the voltage of the S/T interface is passed through to U₀ interface