



We change the shape of the world

Use this template to mark the positions of the holes as preparation for the drilling work. After finding an appropriate place for the unit 1F5210S-xx (not close to ovens or heaters, not in direct sunlight, not in wet rooms), check if the wall can carry the weight of the unit. Use the provided screws and pegs only.

### Technical Specification:

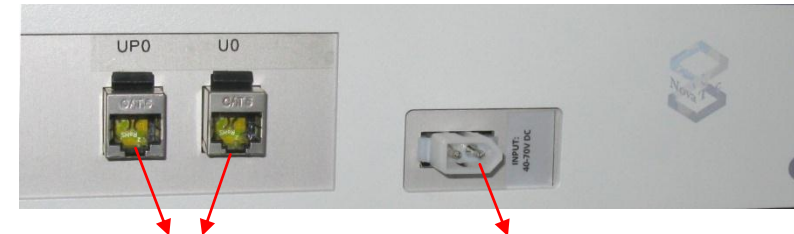
Mechanical Data	
Width x Depth x Height:	19" Chassis: 480 x 220 x 60 mm (1,5 RU)
	Wall-mounted chassis: 365 x 220 x 60 mm
Weight (unit without packaging and auxiliaries.):	3,5 kg for 1F5211M & 3,7 kg for 1F5210S
Electrical Data	
Power Supply End User Side:	100-240 Volts AC (Use the appropriate country local power cord with IEC320 connector on one end).
Power Supply PABX Side:	48 Volts DC (Use the original supplied power cord only!)
Power Input:	1F5211M : 48-70 V DC / 0,3 A    1F5210S : 100-240 V AC / 50-60 Hz / 42-56 VA
Protection Earth:	Separately via earth cable with a cross section of min. 2.5 mm <sup>2</sup> (note the instructions on the label on the back side of the unit). This cable is not included in the delivery package. Internal overvoltage protection as secondary protection available.
Available Interfaces	<ul style="list-style-type: none"> <li>• 1 x Upo Interface (not powered): Maximum loop resistance: 160R*</li> <li>• 1 x Uo (2B1Q) interface (not powered): Maximum loop resistance: 800R*</li> </ul> *: only one type and homogenous cable.
Environmental Specifications	
Storage and Transport:	-20° C up to +90° C 0% up to 95% relative humidity (not condensing)
Operation	-5°C up to +60°C for 1F5210S-xx and 0°C up to +60°C for 1F5211M-xx 0% up to 95% relative humidity (not condensing)



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### Short Instruction – NovaTec S5+ Line Extender

PIN assignment for both units (main power socket in unit two is an IEC 320 standard socket):



Pin 1, 2, 3, 6, 7 & 8 are nc.  
Pin 4 & 5 are connected with the Upo resp. Uo . There is no restriction on polarity.

Pin 1 & 2 must be connected to 48 Volt DC. There is no restriction on polarity.

The label on the back side of the unit identifies the version, serial number and date code of the unit.



Always connect this log to the protective earth.



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## Short Instruction – NovaTec S5+ Line Extender

### Integration of the S5+ Line Extender (1F5211M & 1F5210S):

The S5+ line extender containing Unit-1: **1F5211M** and Unit-2: **1F5210S** have been developed to extend the limited transmission range of **Upn** or **Upo** interfaces. Minimum one pair of units is necessary to get a line extender.

The following picture shows an overview of possible fields of applications of all versions (the version numbers can be found on the label on the back of the S5+). In case of different cable types and diameters a chain of S5+ can be used to get higher ranges. Each S5+ in the chain must be placed at the junction point of each section of the cable type or diameter. For the extension of distances longer than 10 km up to 6x S5+ units can be cascaded. Each S5+ pair will build one section of approx. 10 km. A total distance of approx. 30 km can be covered by cascading. The exact extension depends on the requirements of the protocol and signal transit times.

This instruction guideline contains the instructions for the installation and the first steps to setup a line extender link for both units of the pair.

### Contents of each cardboard:

#### 1F5211M:

- 1- The S5+ in shape of a 19" rack mountable box.
- 2- The installation set (order no. 1F5001MI) containing four screws, four spring nuts and the DC 48 Volt main power connector prepared with an approx. one meter open end cord.
- 3- This guideline.

or

#### 1F5210S:

- 1- The S5+ in shape of a wall mountable box.
- 2- The installation set (order no. 1F5210WH) containing two screws and two pegs.
- 3- This guideline.

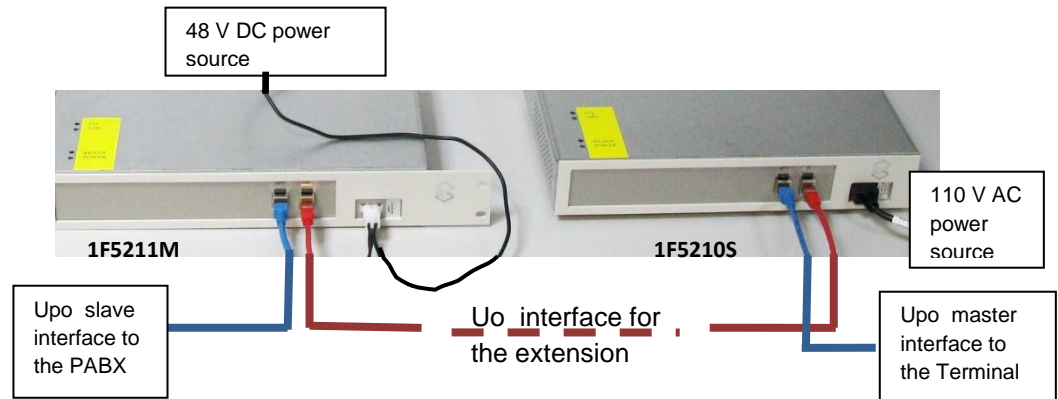


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### Installation and Setup:

After mounting unit one in the 19" rack and attaching unit two to the wall the connection of all parts must be setup by connecting the RJ45 sockets of the units to the network (see picture 1 below).

After switching on the power, the units start a self check. The self check period is shown by the LEDs on the units (see pictures below). In case of complete and correct setup, following states must be shown on the LEDs (see pictures below).



Picture 1: Setup of the network

After restart, the LEDs must show this pattern for approx. 1 minute:



After 1 minute, this status must show up, when the setup is correct:



Any other LED status than the one shown above, is an error indicator: This one shows that the appropriate Uo line is not active, broken etc.:



★ : Blinking LED    ● : Steady on