Auxiliary equipment for communication with the EuroProt protective devices

RS232 cable

This cable is used to connect the RS232 connector located on the front panel of the EuroProt devices to the 9 pin serial output of a computer.
Via this cable the parameters of the protective device can be set and the operation of the device can be supervised using the „Protect for Windows" software, if the communication mode of the device is set previously to RS232 communication mode.

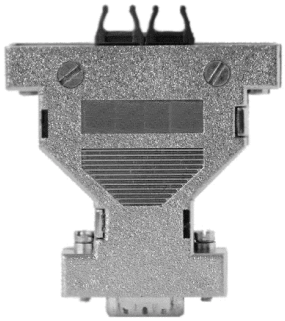
The pin assignment of the 9 pin cable is:

1 DCD	-	7 RTS
2 Rx	-	3 Tx
3 Tx	-	2 Rx
4 DTR	-	6,8 DSR,CTS
5 GND	-	5 GND
6,8 DSR,CTS	-	4 DTR
7 RTS	-	1 DCD
9 RI	-	9 RI

RS-OPTO converter

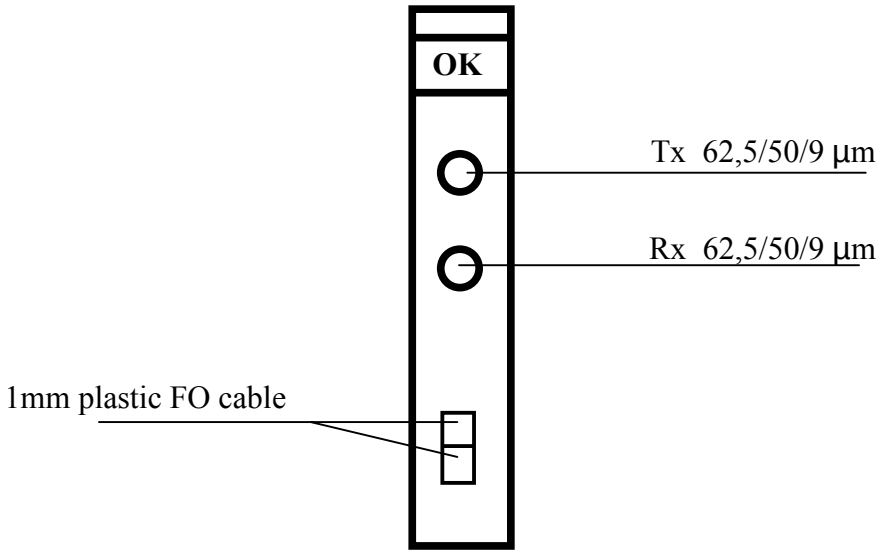
The majority of the protective devices manufactured by Protecta are equipped with connectors for plastic fibre optic cables of 1 mm light conductor diameter. Via this cable the parameters of the protective device can be set and the operation of the device can be supervised using the „Protect for Windows" software, if the communication mode of the device is set previously to fibre optic communication mode. This kind of connectors is used to connect the protective device to the substation supervisory and control system as well.

The RS-OPTO converter transforms the "send" and "receive" signals of a computer to optical signals. If the converter is connected for example to a modem, which does not provide sufficient auxiliary energy for conversion then an auxiliary 12 V power adaptor can be applied.



OK optical converter module

This module converts the signals of a plastic fibre optic cable of 1 mm diameter to a multi- or mono-mode glass fibre optic cable. The application of this module enables involving devices into the plastic fibre optic network, which are located out of the 60-100m maximal communication range of plastic fibre optic cables. The maximal distance can be 2-4 km(50μm) or 80-100km(9μm) depending of the applied fibre optic cable type. The operation of the OK module is independent of the hosting device; it exploits the power supply of the device only. The module can be included in any member of the EuroProt device family.



OR4 ΩP

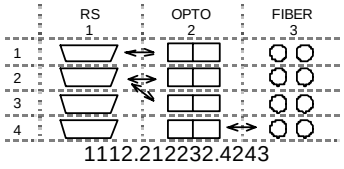
This is a 4 channel fibre optic converter device, the input of which can be 9 pin RS232 serial line, plastic fibre optic cable of 1mm diameter and multi-mode glass fibre optic cable with ST connector. The device can perform up to 4 pre-configured independent conversions, which is to be defined in the ordering with the configuration code, as it is described below. The device is delivered with a mounted power supply cable of 1 m length. The default auxiliary supply voltage is 220 V DC or AC.

OR4 ΩP configuration code

The configuration code defines the interconnection of the individual communication directions. Each connector has an identifier number: that of the RS232 connector in the upper left corner is **11**, that of the glass fibre optic connector in the lower right corner is **43**. All other identifiers are assigned according to the serial number of the rows and columns of the connector allocation.

The identifiers written subsequently describe a connection. The individual independent connections are separated by dots.

Example.: 1112.212232.4243

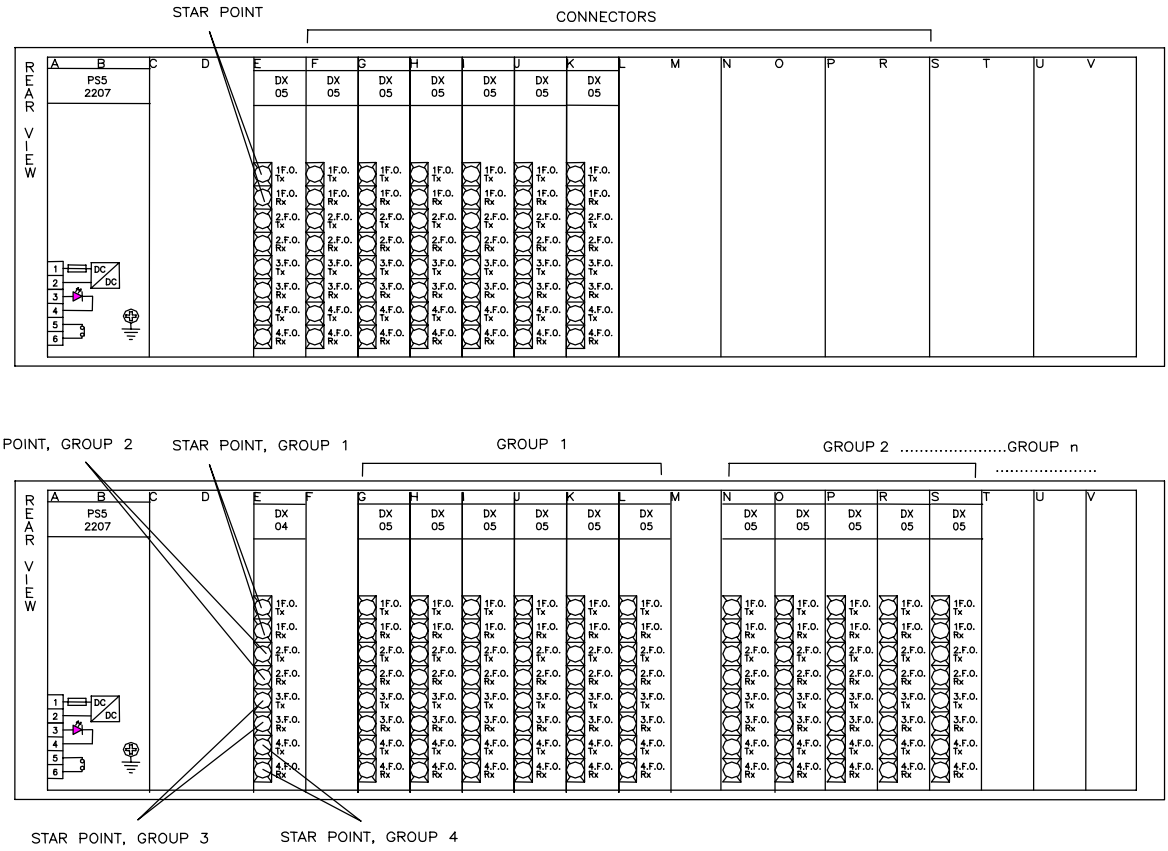


In this example the OR4 device performs an RS232-opto conversion (1112), a bi-directional conversion with RS232 star point (212232) and additionally a plastic cable - glass cable conversion (4243).

DCS Ep optical star coupler

The reliability of the communication networks based on plastic fibre optic cables can be increased – as compared to that of the lopped structure – if star-shaped arrangement is applied. The DCS Ep device is designed to form up to 4 optical star points in a 19” EuroProt device housing.

In all configurations the DX module located on the left side of the groups (as seen from the fibre optic connector side) contains the star point.



The required number of the star points (1-4) and the number of connections in each groups, the sum of which can be up to 48 for a device is to be defined at ordering.

If in mounted state the rear side of the device cannot be accessed, because for example the rack cannot be opened, then a wall mounted version can be ordered, which contains the connectors on the front side.

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