

Transcon DAP 128TC

Transcon DAP 128TC communication protocol

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Supported device types and versions

This protocol supports data reading and writing to the devices "Transcon DAP 128TC data transfer system, the communication format D" and "Temar PRES-COM V2.00".

If only data reading from the central unit Transcon CU-16 or Temar PRES from the transmitter on the lines is used, the communication may be connected directly to the communication computer. In the case of full-duplex transmission, as communication concentrator KPX-02 is required. It is due to strict timing and synchronization of data that are sent to the central unit in synchronization of the received data. Its application firmware "DAP128 V1.00" executes correct synchronization of transmitted data, which are received from the master communication computer asynchronously, to the central unit. The central unit CU-16 is connected to port A of KPX-02 and the communication computer to the port C of KPX-02. Both ports are fitted with the DB9M connectors.

The physical communication lines of DAP 128TC can be equipped with so-called transmitters or receivers. Every physical line can be fitted with at the most 16 transmitters/receivers, the address 0 up to 15.

The system Transcon DAP 128TC in D communication format supports 16 physical lines. Temar PRES supports 8 physical lines.

The transmitter contains 7 inputs. Their values can be received by the D2000 system as I/O tags, value type Digital input (Di) or Analog input (Ai) or Cardinal input (Ci). The values Ai/Ci are 8-bit, serialized in eight cycles. Input No. 7 is an odd parity, which is used to check the transmission of input data on the inputs 0 to 6.

Each receiver/transmitter is configured as a single station. The communication line in D2000 is shared by all the lines of a particular Transcon CU-16 device (16 physical lines) or Temar (8 lines), i.e. it is determined by the RS232 interface of the device. The physical line number, to which the receiver/transmitter is connected, is configured in the station address.

Communication line configuration

- Communication line category: [Serial](#), [SerialOverUDP Device Redundant](#).
- Serial line parameter:
 - Baud rate is 9600 or 19200 Baud (depending on the setting of the device),
 - Odd parity, 8 data bits, 1 stop bit.

Line protocol parameters

[Configuration dialog box](#) - tab **Protocol parameters**.

The parameters of the line influence some optional parameters of the protocol. You can define the following parameters:

Table 1

Parameter	Meaning	Unit	Default value
Protocol mode	Enables to choose a protocol mode.	DAP 128TC format D PRES-COM V2.00	DAP 128TC format D
Read Only Mode	Activates the mode which enables only data reading from the transmitters. Data sending to the receivers is disabled.	YES/NO	NO
Wait Timeout	The delay between the line readings.	ms	50 ms
Inactivity Timeout	Timeout for receiving valid data. If within this time no valid packet is received, the stations (transmitters) are switched to the status of a communication error .	sec	10 sec
Moxa Timeout	When using a redundant configuration of MOXA NPort serial/UDP converters on SerialOverUDP Device Redundant line, it defines a timeout to switch over between them if an error occurs on a converter that is currently active (being used for communication).	sec	10 sec

Debug Packet Binary Contents	Enables a display of debug info that contains the binary data.	YES/NO	YES
Station Status Debug	Shows debug info about the station status (transmitters) after it receives a valid packet (parity errors etc.).	YES/NO	NO

Communication station configuration

- Communication protocol: **Transcon DAP 128TC**
- The form of the station address:

X.Y

where

X is the physical line number (1 to 8 for Temar PRES, 1 to 16 for DAP 128TC format D)

Y is the address of the transmitter/receiver on the physical line in the range of 0 to 15.

Station protocol parameters

[Configuration dialog box](#) - tab **Protocol parameters**

The parameters of the line influence some optional parameters of the protocol. You can define the following parameters of the station:

Table 2

Parameter		Unit	Default value
Module type	Type of station - Transmitter or receiver.	Transmitter Receiver	Transmitter

Status of station (transmitter), error attributes

In case of a communication error, the value of the communication station switches immediately to the status of soft communication error COMM_ERR. If the error is repeated, the station switches to the status HARD_ERR (hard error) according to the setting of the ["Time filter"](#) parameter. As two cycles of reading per second are executed, the station can switch to the HARD_ERR status very quickly.

The error statuses are indicated by the attributes of the value of the communication station. These attributes of value are used:

- Flag P - signalizes the parity error of the transmitter.
- Flag O - signalizes the short circuit on the physical line.
- Flag N - signalizes the loss of communication (see the setting of the ["Inactivity timeout"](#) parameter).

I/O tag configuration

I/O tag types: **Di, Ai, Ci, Dout**.

I/O tag address is the number of input/output on the module in the range of 0 to 6 (receiver) or 0 to 7 (transmitter). Input 7 has the value of an odd parity for the inputs 0 to 6 and can serve for checking the functionality of the transmitter. The status of transmitter parity is also signaled by [the error attribute](#).

Literature

- Transcon DAP 128TC, Description of communication formats, Transcon (c) 1999.

Changes and modifications

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Document revisions

- Ver. 1.0 – January 18, 2010 – Creating of document



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